

MANUFACTURERS' RECORD

A Weekly Southern Industrial and Hardware Newspaper.

Vol. XIV. No. 22.
WEEKLY.

BALTIMORE, JANUARY 5, 1889.

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Steam, Hydraulic and Locomotive Packing,
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Send for Prices.

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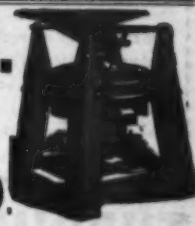
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Branch Office, 108 Liberty Street, NEW YORK. With most approved Safety Devices.
Dumb-Waiters, Automatic Hatch-Doors, &c.
PHILADELPHIA, PA.
Boston Office—14 HIGH STREET.

Report of the AQUEDUCT Commissioners.

[NEW CROTON AQUEDUCT, NEW YORK.]

AN ELABORATE VOLUME, CONTAINING AUTHORITATIVE TABLES BY THE CHIEF ENG., B. S. CHURCH. JUST ISSUED.

PLANT (by actual count from Table 12.)
Number of Ingersoll Drills used..... 242
Number of Drills of all other kinds used..... 203
PROGRESS (by actual figures from Table 8.)
Average weekly progress in best 10 headings that used Ingersoll Drills exclusively (omitting all idle ft. weeks)..... 38.72
Average weekly progress in best 10 headings that used other drills exclusively (omitting all idle weeks) 31.68
DIFFERENCE OF 80 PER CENT. IN FAVOR OF INGERSOLL DRILLS.

All headings where Ingersoll Drills were used exclusively have been completed. Send for description of Aqueduct, with Engineers' Tables of Progress and Catalogue. Sent free.

INGERSOLL ROCK DRILL CO.,
10 Park Place, New York City.



The "GORTON" Boiler.

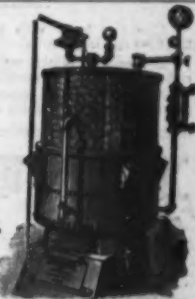
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Cotton Gins, Engines and "Self Packing" Hydraulic Presses, Boilers, Gin Feeders and Condensers.

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Largest works of the kind in the world.

25 to 60 per cent. more power with same belt than iron pulleys.

LIGHT, STRONG AND CONVENIENT.

Every One Guaranteed.

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500 Tons

New Rails,
All Weights.

We have for immediate delivery, at Cincinnati or Portsmouth, Ohio, 500 Tons selected second hand 34 Pound Iron Rails in good condition.
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Spikes,
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34 Pounds.

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IRON AND BRASS FOUNDERS.

Wheels mounted on horizontal Shaft a specialty. Iron Flumes, Penstocks, and everything pertaining to Water Wheel Work. Head Gate Gearing and Apparatus. Rotary Fire Pumps and Friction Gearing. Friction and Improved Clutch Pulleys.

Friction, Clutch and Angle Couplings. Mill Gearing, Shafting and Pulleys. Iron and Brass Castings. Water Wheel Regulators. General and Special Machinery. Send for descriptive Catalogue.

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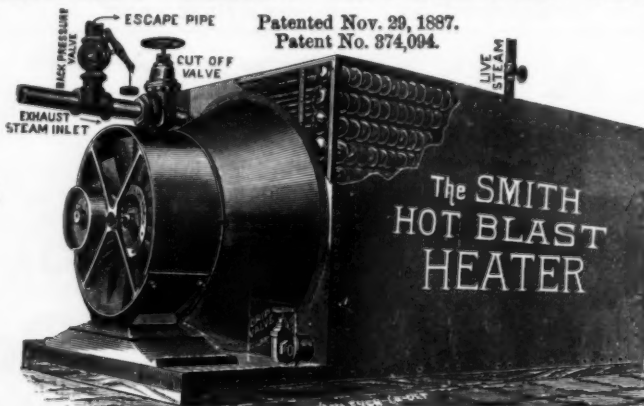
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Largest for the Price and
The Most Perfect and Economical,
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The only Hot Blast Kiln made where the fan handles the cold air, pushing it through the heater to the lumber HOT.

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LAUNDRY MACHINERY.

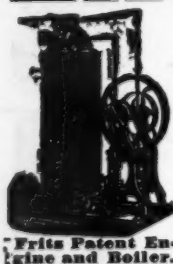
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Pronounced the Best by all Laundrymen using them. Dealer in

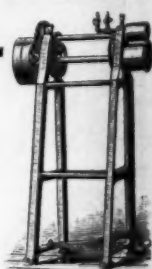
LAUNDRY MACHINERY--Outfitter of Laundries, Complete.

Send for Illustrated Catalogue and my Book of Useful Hints for Steam Users.

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Fritz Patent Band and Cape Collar Ironer.

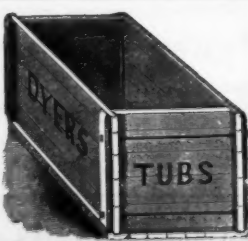


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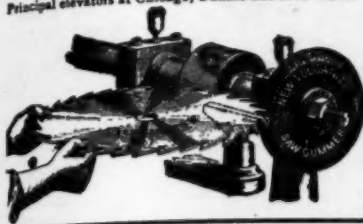
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This company has manufactured the largest Belts made in the world for the Principal elevators at Chicago, Buffalo and New York.



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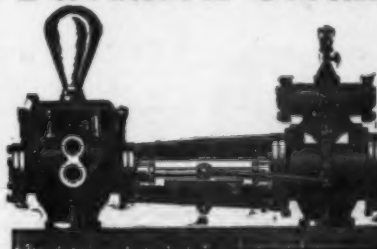


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**Simple,
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Reliable,
FOR ALL
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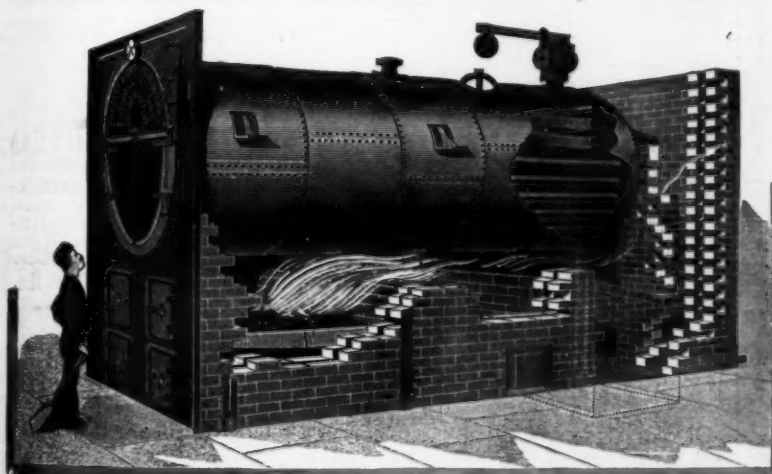
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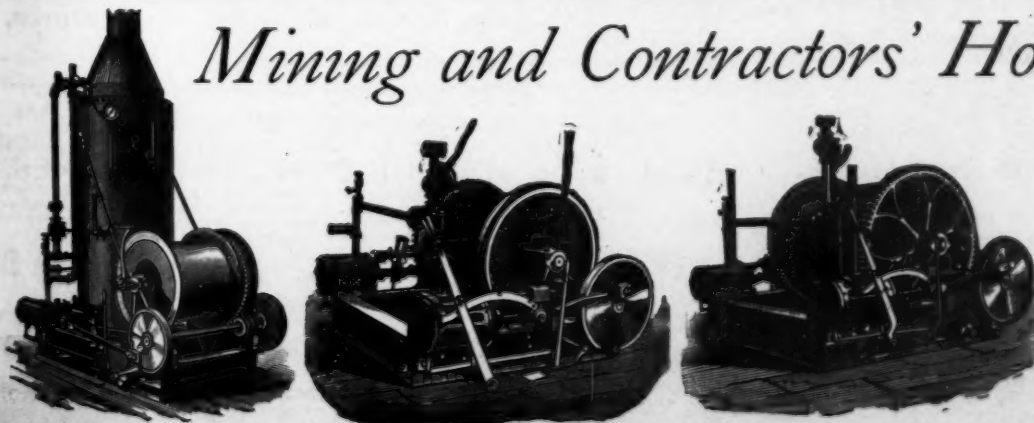
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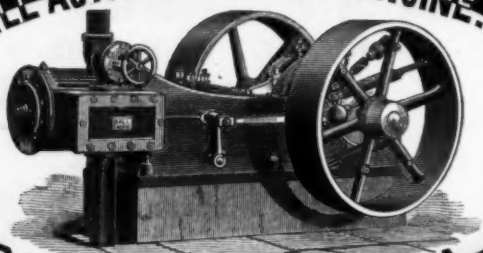


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FAST DRUMS with REVERSE LINK,
FRICTION DRUMS without LINK,
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BALL AUTOMATIC CUT OFF ENGINE.



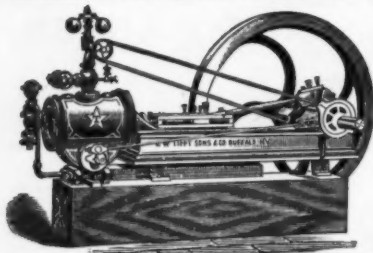
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RELIABILITY **SIMPLICITY**

THE MOST PERFECT GOVERNING EVER OBTAINED.

—) FOR THE LOWEST-PRICED FIRST-CLASS (—)

ENGINES & BOILERS

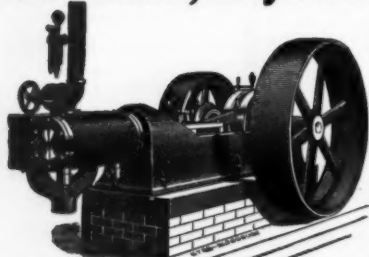


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5 to 500 H. P. Special Stock Sizes 5 to 50 H. P., both Stationary and Semi-Portable.

A few good Second-Hand Engines and Boilers are for sale at an astonishingly low figure. Must be sold to make room for stock. Correspondence solicited. Mention this paper.

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Automatic Cut-off Engines

5 to 300 Horse Power.

Economy in Fuel Consumption, Close Regulation, Great Durability and Simplicity, Perfect Workmanship and Design.

Unrivalled in these qualities, our engines are suitable for all purposes, especially where high speed and difficult services are required, as in electric-light plants, rolling mills, etc. Send for Illustrated Catalogue.

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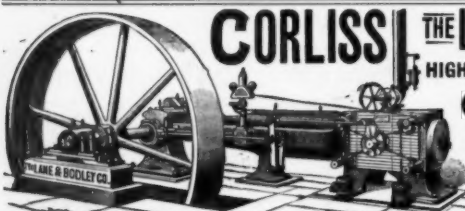
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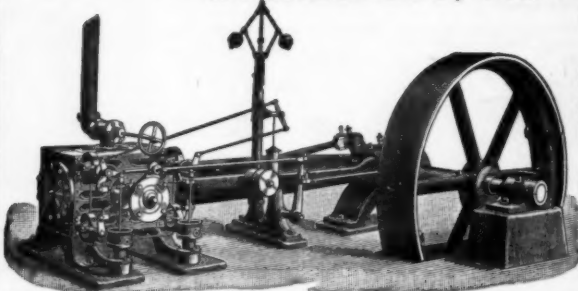
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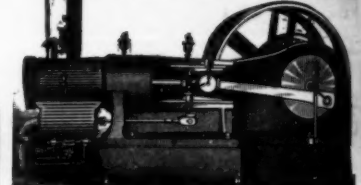
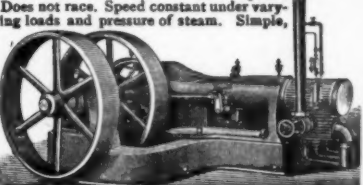
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For Electric Light, Flour, Cotton, Woolen and Rolling Mill Service and all other purposes requiring power. Economical in Steam Consumption. Does not race. Speed constant under varying loads and pressure of steam. Simple,

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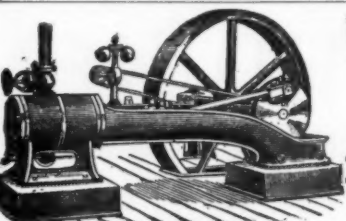
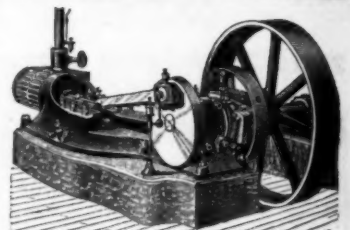
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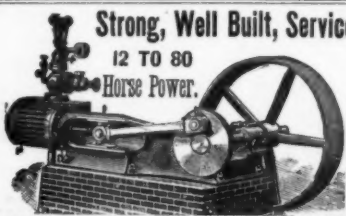
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Automatic Cut-Off ENGINES

Double Drum Derrick Engines. Single Drum Reversing Engines, suitable for Mines and Rapid Hoisting.

Catalogue sent on application.

Correspondence respectfully solicited.



Strong, Well Built, Serviceable

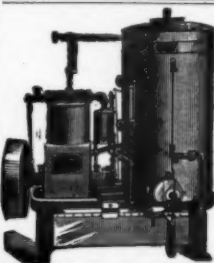
12 TO 80

Horse Power.

STEAM ENGINES

Adapted to Heavy, Continuous Work. Every Engine tested under full load. For descriptive circulars, address

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Acme Automatic Engine,

With BRYANT'S Patent Safety Boiler.

Sizes 1, 2 and 4 H. P. Fuel, Kerosene (Coal) Oil, 110° to 120° fire test. No dust, ashes, or smoke. No Skilled Engineer required. "Brake" Test show that 3 1/2 gals. fuel will deliver a full H. P. on belt for 10 hours, in the case of our 1 H. P. Engine and Boiler.

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(Successors to Wm. A. Harris,)

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Builders of HARRIS-CORLISS ENGINES,

FROM 20 TO 2,000 HORSE POWER. These Engines are carefully built of best materials and in different forms, such as Non-Condensing, Condensing and Compound Condensing. Send for copy of ENGINEERS AND STEAM USERS' MANUAL, by J. W. Hill, M. E. \$1.25. Mention this paper and send for catalogue. WM. A. HARRIS, Pres. & Treas. The D. A. TOMPKINS CO., CHARLOTTE, N. C., Southern Agents.

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Acknowledged and recommended by Engineers to be the most perfect steam flue cleaner in use. Advantages—1. It has no springs or screws to break. 2. The steam can be turned on full head without being wasted. 3. It delivers perfectly dry steam through the tubes, leaving them perfectly dry and clean. A trial is all we ask. Manufactured by **J. REGESTER & SONS, BALTIMORE, MD.**





Continental Boiler Scale Preventive.



Positively prevents and removes scale in steam boilers without acting on any of the metals. A real necessity for Southern steam users. Saves fuel, repairs and trouble, and doubles the life of the boiler. Sold on its merits, and satisfaction guaranteed or no pay. Write for sample.

The GLEASON
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THE EBERMAN BOILER FEEDER

Is the Best and Most Reliable for Feeding Locomotive and Stationary Boilers.

CORRECT in Principle.—Positive in Action.—**CANNOT FREEZE.** Simple in Construction and Operation. Is made of the best material. Only One handle to operate. Each Feeder is thoroughly tested to work from 15 to 150 pounds of steam without any adjusting. All we ask is a trial. Sold by dealers generally.

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Write for Circulars.
OVER 2,000 NOW IN USE.

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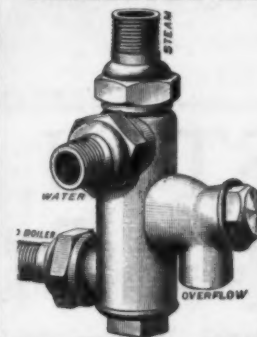
A Thoroughly Reliable and Simple Boiler Feeder for Stationary, Marine and Portable Boilers.

POINTS TO BE CONSIDERED.

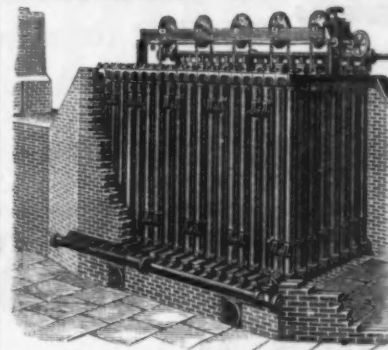
They have only two VALVES to operate, only one after water valve is adjusted. They require no watching, as they *restart automatically* if feed is broken. They lift 15 to 20 feet, and hot pipes don't affect them. They work from 25 to 135 and 150 lb. pressure on water at natural temperature. The working parts are interchangeable and can be taken from injector without any tools or breaking connections. Send for circular, price-list and discount.

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MANUFACTURED BY
PENBERTHY INJECTOR CO. Detroit, Mich.



GREEN'S ECONOMIZER.



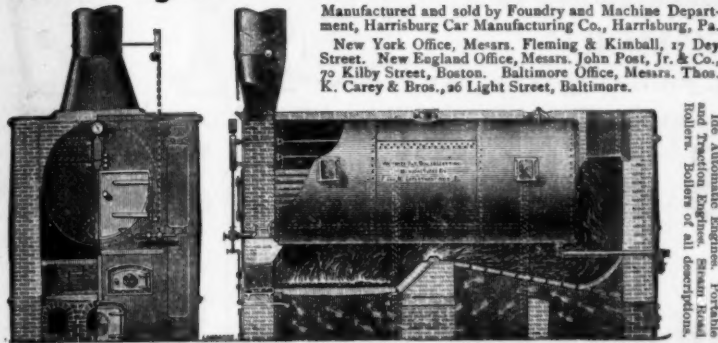
The only APPARATUS that will deliver the FEED WATER at over 212° Fah. by utilizing WASTE HEAT, usually lost in stack. SAVES 25 PER CENT. OF COAL.

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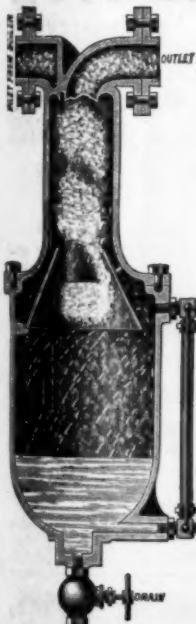


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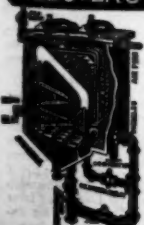
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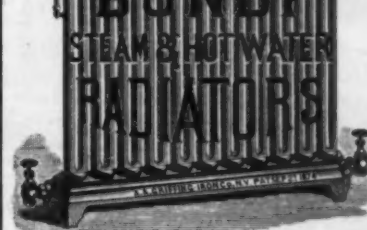
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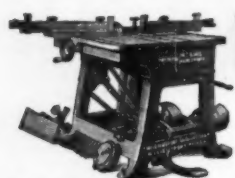
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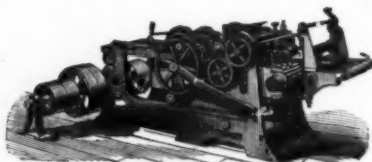
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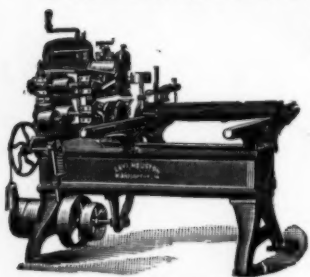
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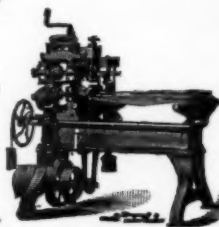
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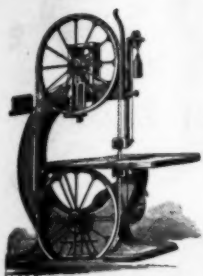
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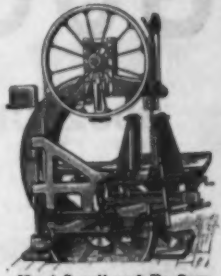
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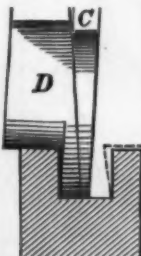
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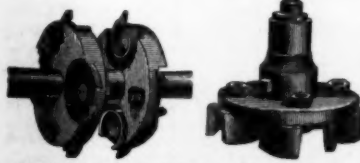
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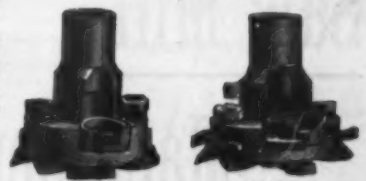
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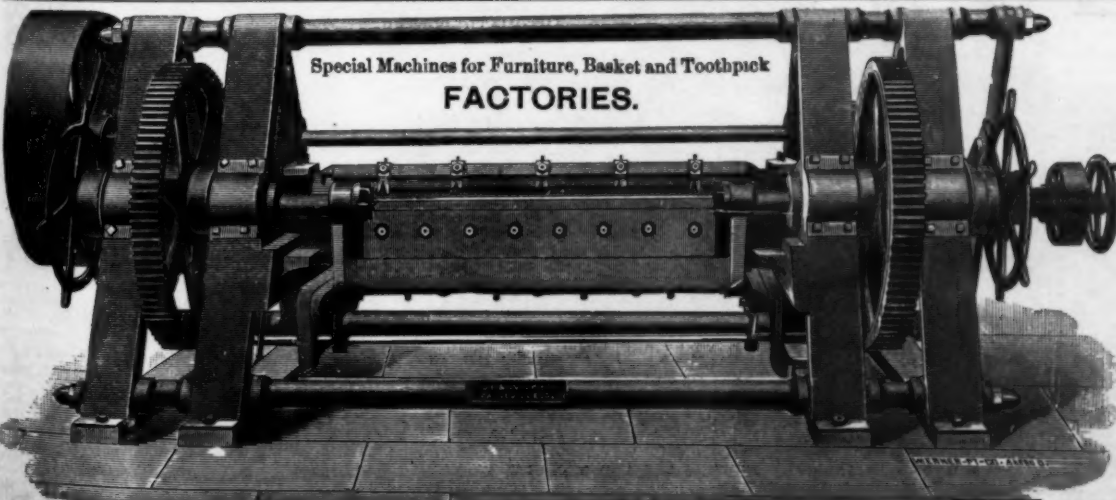
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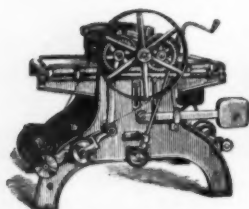
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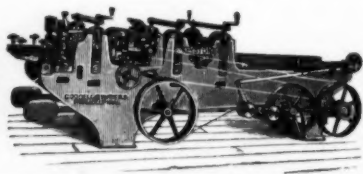
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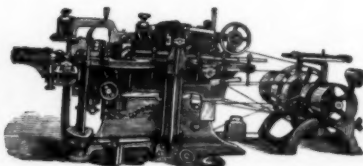
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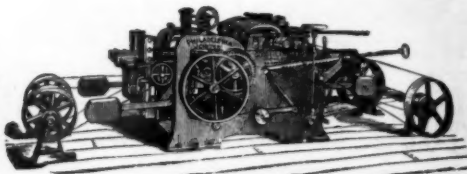
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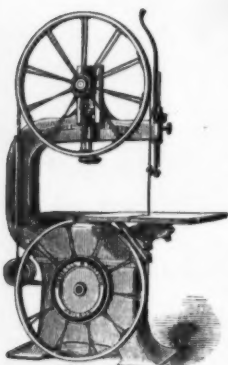
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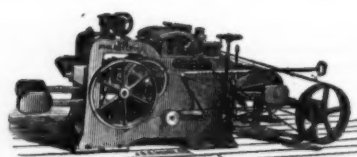
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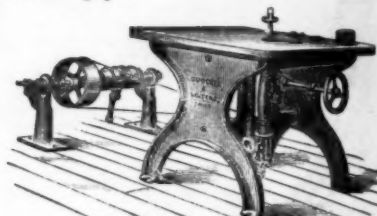
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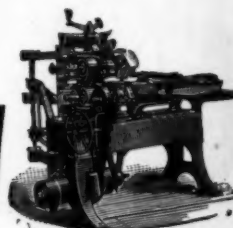
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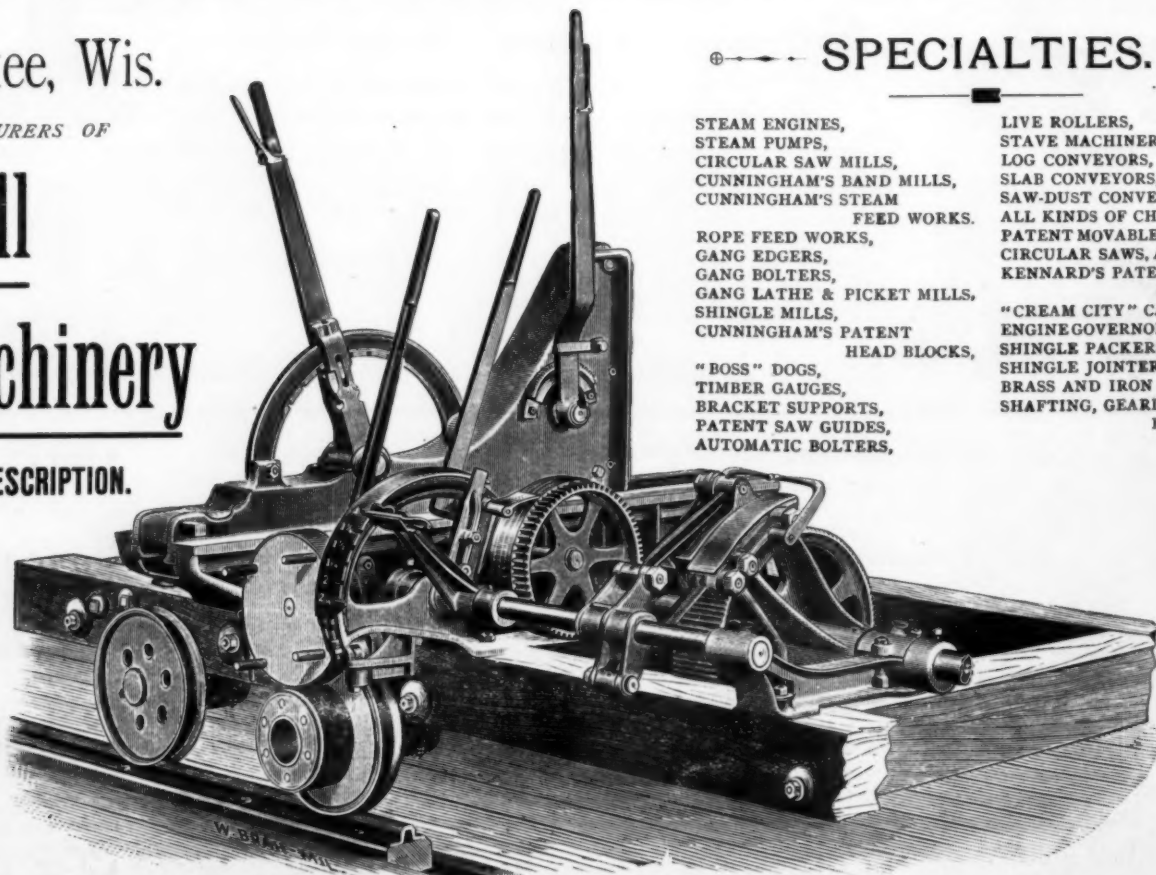
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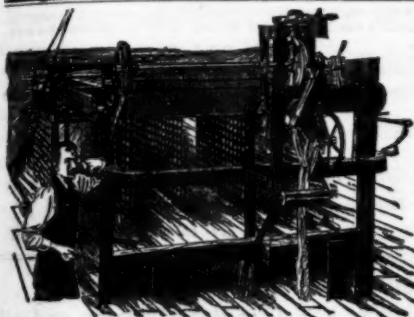
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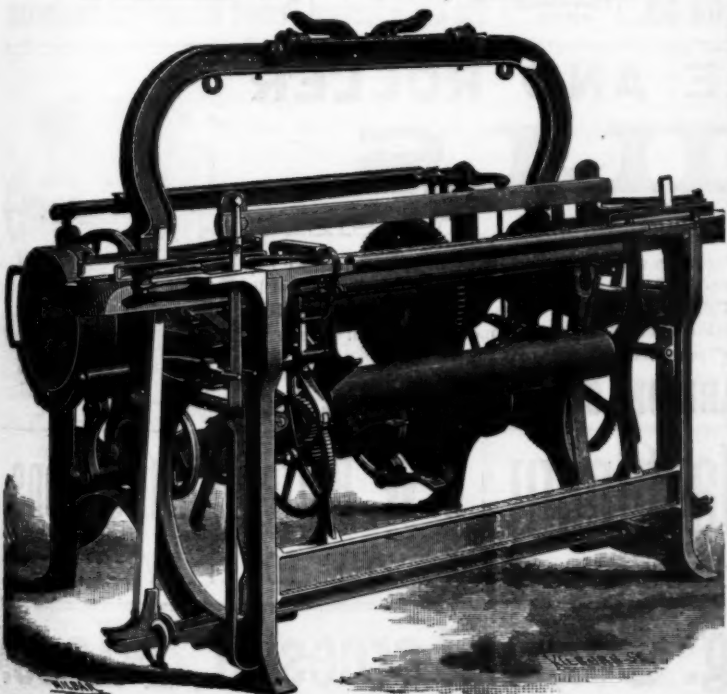
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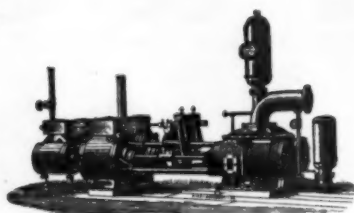
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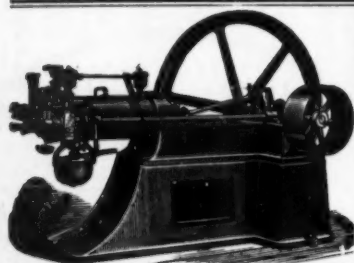
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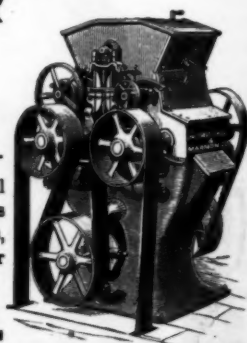
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BALTIMORE, JANUARY 5, 1889.

IF you contemplate starting a new enterprise of any kind, whether it be a railroad, an iron furnace, a rolling mill, a machine shop or foundry, electric light, water or gas works, saw mill, planing mill, furniture factory, fertilizer factory, cotton mill, or anything else requiring machinery of any description, send particulars to the MANUFACTURERS' RECORD. A postal card giving character of enterprise and kind of machinery wanted will be all that is needed. It will prove of great benefit to you.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

The South's Timber Supply.

The remarkably interesting article on "The South's Timber Supply," by Mr. W. H. Howcott, of New Orleans, in this issue of the MANUFACTURERS' RECORD, deserves careful study. The facts which he gives as to the rapid increase in the consumption of yellow pine, the millions of acres held by Western and foreign capitalists, the steady increase in values and the enormous investments of outside money in timber lands should command wide attention. The South, or rather the people of the South, have parted with a large part of their vast pine forests at low prices, and now that values are so strongly tending upwards, it would seem to be time for owners of Southern pine lands to hold on a little longer, and "not sacrifice them at prices which in a few years will seem ridiculously small. We commend Mr. Howcott's article to the attention of our readers.

WHY is it that the MANUFACTURERS' RECORD's advertising business has doubled within the last twelve months? Why is it that they who advertise in it longest are its best friends? Why is it that such a large proportion of those who bought space in it during the first year of its existence have been advertising in it ever since? Why is it that it secures so many renewals of advertising contracts? Why is it that those who advertise in it for three or six months as an experiment, nearly always follow up their "experiment" with a year's contract?

The Future Center of the World's Iron and Steel Trade.

When Mr. Edward Atkinson, while addressing the Board of Trade at Atlanta last spring, remarking upon the rapid growth of various branches of industry in the Southern States, added that the real competition of the "South with other sections" would not become serious until her working people earned much higher wages, which would then be necessarily accompanied by a lower cost of production," some of his audience stared and thought he was a little cracked; but thinking on the matter, they have come to the conclusion that there is a very profound significance in the law of wages, which he has presented more fully than any one else; to wit, that since both the wages or earnings of the workman and the profits of the owner are derived from the sale of the product, that product will yield both the best profits and the highest wages which is made by the expenditure of the least quantity of human labor in ratio to the dollars of the product; coupled with the most complete application of science and invention to the methods by which the work is done. When science and skill are combined, it follows of necessity that the maximum product may be made with the greatest certainty. Next, it follows that a small quantity of skilled labor produces a larger quantity of product than a greater quantity of unskilled or common labor; and when a product made under such conditions is brought into the market in competition with other products made under less favorable conditions, the market price being the same, the return in money will be much greater to the few workmen who did the work skillfully under the best conditions than the return to those who did the work somewhere else under less favorable conditions. Next it follows that the workmen who earn highest wages by making the largest product at the lowest cost have more to spend for their own subsistence, while, on the other hand, they get more for each dollar of their money itself, in buying at low prices goods made at low cost and high wages. It follows that high wages derived from a low cost of production are the surest indication of the progress of a community.

There are, however, other elements in the case. The natural conditions under which certain products are made may be so much more advantageous in one section of the country than in another as to enable even those who have not the highest degree of skill, and who may therefore put a greater quantity of labor into their work, yet to produce a given crude product at a lower cost than the skilled laborers in some other part of the country where the natural conditions are less favorable.

These principles are of the utmost

importance in their application to the making of iron and steel. The full competition of the South in supplying iron and steel has begun even at low wages and some want of skill, but it has not yet been felt in its full force, for the reason that up to this date wages have been lower in the South, labor less skilled, and the quantity of labor to the ton of iron or steel has therefore been much greater than it need to be. What will come hereafter will surely be that intelligent owners of iron mines and works will bid the highest wages that the market will permit for men of the highest skill; then if the advantages of the Southern mines over others are what they purport to be, the quantity of labor required per ton when measured by days or hours will be much less than anywhere else, and a very low cost of production will be the necessary result of the application of a small quantity of work measured by time at a high rate of wages measured in money.

What, then, are the facts? We propose to enter upon this line of investigation. What is the quantity and the quality of the labor called for in the older iron and steel sections, Pennsylvania, Ohio, etc.? What is the quantity and quality of the labor called for in Alabama, Georgia, Tennessee and Kentucky on each ton of iron delivered on the cars at the furnace? This being determined, what is the relative cost of moving a ton of iron and steel from the furnace to the place where it is to be used? In the more northern sections of the coal and iron deposits of the great Appalachian chain there are said to be sharp ridges of sandstone, separating the iron from the coal, and often separating both from the limestone, only to be surmounted by a long haul over bad grades.

In Dr. Cyrus Elder's Tract No. 10, published by the Industrial League of Philadelphia, 1888, he says: "The books of one of our principal steel rail manufacturers for the year 1887 show that the cost of transporting to its works the materials used in making each ton of steel rails amounted in that year to \$12.75 per ton. This covers merely the ores, coke, limestone, clay and ganister. Think of it; this company paid to transportation companies \$12.75 for every ton of finished rails made at its works, amounting to \$1,591,332.92 in one year."

Dr. Elder proposes to justify the present high duties on foreign iron, on the ground that the Mills bill, which provided for "a duty of \$11 a ton, did not much more than compensate the American manufacturer for the excess in cost of assembling the materials which he used above what is paid by his foreign rival."

Now what does it cost to assemble the materials for making a ton of iron and a ton of steel in Alabama or in other Southern States. The points of inquiry are as follows:

1st. Mines of coal, of ore and of

limestone being worked at different depths under different conditions, how many days' labor and of what kind does each ton of coal, of iron ore or of limestone represent when brought from the bowels of the earth to the pit's mouth in each section?

2d. What number of dollars per ton of iron or steel produced does it cost to assemble these materials in the furnace?

3d. What number of days' labor and of what kind does each ton of iron or of steel represent after it has been carried through the furnace and is delivered by continuous heating either in the form of the pig, the ingot, the bar or the rail.

When these questions are determined it will perhaps appear that the ton of iron or steel delivered on the cars in Alabama represents a less quantity of labor than that produced at the same point, to wit, on the cars at the furnace ready to be moved to its place of consumption, either in any other part of this country or in any other part of the world. If this is true, it is time for the South to prove it, because then our Southern iron works may attain the lowest cost of production by paying the highest rates of wages for the most effective labor that can be obtained.

In the high sections of Alabama, of Georgia, of Tennessee and of Kentucky, where the iron, the coal and the limestone lie near the surface and in close proximity each to the other, where the climate is moderate and healthy, where the surrounding country yields the most abundant supplies of timber, of food and of all the necessities of life, it may be fairly assumed that the product of iron and steel can be conducted under better conditions than in any other part of this country, and under vastly better conditions than in the "black country," so called, of Great Britain.

Skilled men are apt to be intelligent men; they know their own value, and they know where to seek the best conditions of life for themselves and for their children. Will they not be attracted to these iron and steel centers of the great southern country? Will they not at these points produce iron and steel with a less quantity of work conducted under better conditions than have yet been consistent with the production of these metals elsewhere? Will not the necessary correlative be low cost and high wages, the opportunity to earn higher wages being the magnet which will bring the workman to the point where he is most worthy of his hire? If this result can be accomplished, the next step will be one in which a beginning has already been made; the works for the conversion of iron and steel into the higher forms of use, which give employment to a greater number of workmen, will be established near the supply, and with these works will come all the lesser arts. The one thing now required to place this country in even competition with all

others in the making of iron and steel, and in the conversion of these metals into higher forms for consumption, is that the disparity in the price of these metals, which keeps them always a little higher in this country than in Great Britain, shall be removed.

Few persons are aware that in the year 1887 the consumption of iron and steel in the United States came to forty per cent. of the entire product of all the mines and works of the world; no other country could possibly supply us with this metal; we must make the larger part of our own supply whether we will or no. Whether we shall use the supply of crude materials on even terms with our competitors in other countries in making machinery, locomotives, marine engines and in building ships rests wholly upon removing the disparity in the price or cost of these crude materials to those who convert them into the higher forms for final consumption. How that disparity shall be removed is the question which may now interest every student of economic science. That nation, or that section of any nation which possesses supremacy in the production of iron and steel and in their conversion to final forms for use, will dominate and control the commerce of the world.

SOUTHWARD the course of Empire takes its way.

IRON is king, and the South can make iron at prices that are beyond competition.

THE laws of trade are laws of nature. That articles of human consumption and use will be made where they can be made cheapest is as true as that water will seek its level. In the South there are possibilities of economy in manufacture that exist in no other part of the Union, and the South will inevitably wield the sceptre of industrial supremacy.

As a source of information on Southern industrial topics the **MANUFACTURERS' RECORD** is without an equal.

THE South is every year shipping less and less of its cotton away to be manufactured elsewhere. The textile industry is moving South. Where the cotton grows there it will be manufactured.

THE South is now an inviting market for manufacturers of machinery, building material, etc., and is growing more important in that regard every day. The most economical and effective method of cultivating this field is to use the advertising columns of the **MANUFACTURERS' RECORD**.

There is only one way to keep accurately informed as to the progress of the South's development. That way is to read the **MANUFACTURERS' RECORD** regularly.

What the South Has Done.

Another year has rolled around and the **MANUFACTURERS' RECORD** sums up the progress of another twelve months in the history of the South's industrial growth. It is a wonderful history that the South is daily writing. The records of human race show no more heroic efforts than the people of this section have displayed in the development of their vast resources. From the depths of poverty entailed by the most disastrous war in the world's history, with a disorganized labor system, and under discouragements that were appalling, the South has emerged into a period of industrial activity probably never equalled before in any country. From Maryland to Texas the great work of development goes steadily on. But as yet we have only seen the beginning—the foundation, in fact—of the most wonderful industrial structure that the world has yet known.

With mineral wealth surpassing in extent, variety and possibilities of profitable development any other country on the globe; with a climate that has no equal; with agricultural advantages so vast as to almost surpass comprehension, yielding even now, while so small a portion of the land is under good cultivation, over \$800,000,000 worth of farm products a year; with great rivers and an immense sea coast; in truth, with almost every advantage of every other country combined in her own matchless resources of climate, soil, minerals, timber, the South is just as surely destined to be the richest country in the world as it is true that she surpasses all other countries in natural resources and advantages.

To sum up only a few leading points in the South's growth during the last few years, we present a few facts gathered from recent issues of the **MANUFACTURERS' RECORD** and brought together simply to convey some general idea of what has been done in that brief period. Our readers are doubtless familiar with these facts, but they are well worth repetition just at this time.

In three years over 8,600 new manufacturing and mining enterprises have been organized in the South and thousands of old plants greatly enlarged. The list of new enterprises extends over almost the whole range of human industry, embracing pig iron furnaces, foundries, machine shops, steel works, cotton and woolen mills, cotton-seed oil mills, cotton compresses, fruit canning factories, carriage and wagon factories, agricultural implement factories, flour mills, grist mills, saw mills, planing mills, sash, door and blind factories, shuttle factories, handle and spoke factories, barrel factories, shingle mills, furniture factories, tobacco factories, brick yards, ice factories, fertilizer factories, stove foundries, wire fence factories, lime works, soap factories, tanneries, glass works, gas works, whitening factories, distilleries, potteries,

electric light works, marble and slate quarrying companies, and companies to mine coal, iron ore, gold, silver, mica, natural gas, oil, &c.

The amount of capital and capital stock of new enterprises organized in the South during 1888 aggregates the enormous sum of \$168,800,000. The railroad mileage of the South has been increased by the addition of over 20,000 miles since 1879. Since that year over \$700,000,000 have been spent in building new roads and improving old ones. The assessed value of property has increased over \$1,000,000,000 since 1879. This does not show the full increase in the value of property, since there is a very large amount of manufacturing property created since 1879 which does not appear in the tax assessments, being exempt by law from taxation. In 1880 the South made 397,301 tons of pig iron, in 1888 nearly 1,100,000, and in 1889 it will produce about 1,800,000 tons.

In 1880 6,048,571 tons of coal were mined in the South, and in 1887 the output was 16,476,785 tons. Cotton mills have increased from 180, with 15,222 looms and 713,989 spindles, in 1880, to over 300 mills, with about 38,000 looms and 1,800,000 spindles, while many new mills are under construction, and many old ones being enlarged. The value of cotton goods made in the South was \$21,000,000 in 1880 and nearly \$50,000,000 for 1888. In 1880 there were 40 cotton-seed oil mills in the South, now there are about 160, with about \$12,000,000 invested.

The value of the South's agricultural products for 1888 was about \$800,000,000, against \$571,000,000 in 1879. The value of the South's live stock is now \$575,000,000, while in 1879 it was \$391,400,000. The production of grain rose from 431,074,630 bushels in 1880 to 626,305,000 bushels in 1887, an increase of nearly 200,000,000 bushels, and the records of 1888, when compiled, will show even a larger gain.

In every line of industry the same tremendous strides of progress are being made. The South produces \$800,000,000 a year of agricultural products. Since 1879-'80 the South's cotton alone has sold for \$2,800,000,000.

Even these figures, which read almost like a romance, do not adequately express the full measure of the South's well-rounded development. They do not tell of the marvelous progress in many lines of industrial growth, of the many new enterprises constantly coming into existence to utilize as the basis of manufacture materials hitherto considered worthless, of the rapid increase in diversified industries to produce at home goods for which the South has in the past had to depend upon the North, of the car works, the locomotive works, the hardware factories, the furniture factories, pin and tack and tool works, glass works, potteries, &c. These figures are given

simply as exponents of what has been done in all lines of Southern development. Well may the South boast of what it has done in the last five years, for no other country in the world can show such a remarkable record, especially under disadvantages which were enough to almost crush the life out of Southern enterprise. Looking at the record of the South during the last five years, we ought probably to be satisfied to hope that the coming five would show as wonderful growth in agricultural, manufacturing, mining and railroad interests; but in truth the outlook indicates that the next five years will far exceed in actual development the last five, and that the South has really but scarcely commenced its industrial development.

THE MANUFACTURERS' RECORD publishes news. It does not fill up with stale matter gleaned from other journals. The information on Southern affairs furnished to its readers is *fresh, complete and authentic.*

"**THE** South is solid" in the determination to utilize its natural advantages, develop its resources and build up its industrial interests. The South will be in time the richest area on the globe, and its people the happiest.

ADVERTISERS to whom we have quoted rates sometimes write us that they can get advertising at one-fourth or one-half of what we charge, and so they can. You can buy a hat for a dollar instead of paying five dollars for one, but it will not be the same sort of a hat.

WE sometimes hear the complaint that the advertising rates of the **MANUFACTURERS' RECORD** are high. In comparison with the prices paid some other journals they are, but considering the value of the **MANUFACTURERS' RECORD's** advertising space, they are remarkably low.

THE South grows all the cotton woven in this country; why should she not have a monopoly in the manufacture of cotton goods? The South has iron and timber in greater abundance and cheaper than any other section; why should she not control the manufacture of all articles of ordinary use?

THE South is the place for the manufacturer, because there he is nearer to the raw material, and has around him a new and ever growing market for his product; it is the place for the capitalist, because the opportunities for safe and profitable investment are such as cannot be found anywhere else; it is the place for the merchant, because the rapid increase in population and in wealth creates a constantly increasing demand for merchandise of every sort; it is the place for the farmer, because the same causes provide a continually growing market for all the products of the farm and garden.

THE RECORD OF A YEAR.

The South's Industrial Advance During 1888.

WONDERFUL PROGRESS IN THE PAST AND BRIGHT PROSPECTS FOR THE FUTURE.

Over 8,600 New Enterprises In Three Years.

The past year was an eventful one in the South's industrial advancement. Many of the great enterprises—the furnaces, rolling mills, car works and kindred establishments projected during the boom of 1887, and the construction of which occupied from twelve to eighteen months, passed from the constructive period to that of active work as wealth producers during 1888. Some of the splendid furnaces at Ensley City, Bessemer, Gadsden, Pulaski, Birmingham and elsewhere, which are destined to play such an important part in Southern industrial history, went into blast during the latter part of the year, while many others are nearly ready to start up with the opening of the new year. New coal mines to supply the ever increasing demand for Southern coal have been opened in Maryland, in the Virginias, in North Carolina, in Kentucky, Tennessee, Alabama, Georgia, Arkansas and Texas, and the output for 1888 was far beyond the production of any preceding year, while 1889 will show as great a growth in the amount of coal mined over 1888 as it will in pig-iron making over last year. Cotton-mill building has been active, and the year has witnessed a great expansion of that industry. In every line of manufacture, covering the widest diversity of production, in railroad construction, in the opening of iron and coal and precious metal mines, in the utilization of all the vast natural resources of this wonderfully blessed section, the progress was not only rapid, but it was solid and substantial. Local booms are lost in the general development of the whole South, and of the wide diversity of this industrial advance, which includes in its scope the greatest range of industries, from the making of pins to the building of locomotives and iron and steel steamships, from the production of brooms to the manufacture of pianos, from the digging of the ore to the working of steel, and from the cutting of the tree to its fashioning into almost every line of wood-working, whether it be in rolling pins and bread trays to furniture of all kind, both fine and plain, or cars, both freight and passenger. The industrial growth of 1888 covers this whole range of enterprise, and extends its sweep from Maryland to the very borders of Mexico. Through this magnificent domain, a vast empire in itself, the most wonderfully blessed country upon which the sun shines, the thrill of a new life is felt, and bright as has been the record of the last few years, the next half decade will show a growth in wealth, in population, in the utilization of the boundless resources of soil, minerals, timber and climate scarcely dreamed of now even by the most ardent enthusiast. We need but look back a few years to see what has been accomplished already, and how firm a foundation has been laid for future growth. Five years ago Birmingham was but little known and gave but little promise of the unequalled growth which has marked its history since 1886. Anniston was but a small town, hardly heard of outside of its own county. Decatur was a dead country town of probably 1,200 inhabitants. Bessemer had not even been dreamed of by its projector. Sheffield was a corn field. Roanoke numbered probably less than 2,000 people.

Dallas scarcely one-fifth of the number of which it now boasts. Florence and Rome were sleepy Southern towns, living on cotton trade alone. Chattanooga was small and insignificant compared with its present position of wealth and business. Louisville was content with the past, and Kentucky had scarcely thought of developing the untold mineral wealth which now bids fair to make that State one of the richest in the whole Union. Five years ago the industrial development of the South was confined to a very small area and was of limited extent. To day the whole South is full of life and energy, and is building up as no other country ever did before. Home capital is being supplemented by heavy investments of outside money, which is destined to pour into the South in a steady stream for years to come, while Northern and Western men of energy, enterprise and experience are joining hands with the people of the South in turning the raw materials of this section into the finished product, and thus annually adding millions to its wealth. The new year opens with brighter prospects than the South has ever before seen, and as marvellous as has been the record for the last two years, it will doubtless be eclipsed by the work of 1889.

The MANUFACTURERS' RECORD has repeatedly called attention to the increasing diversity of the industrial growth of the South. Small enterprises of all kinds are springing up in every direction, and year by year the South is increasing its production of many articles for which it has heretofore been dependent upon other sections. An examination of the recent industrial growth of that section will show how rapidly this is going on. Glass factories in Alabama and Georgia have proved that the South can make its own glass. Car works in twenty or twenty five places and locomotive works in Richmond and Roanoke demonstrate that the South can make its own cars and locomotives at a lower cost than they can be made in the North or West. Furniture and carriage factories all over the South are beginning to supply the home demand, while canning factories are saving hundreds of thousands of dollars to the South. No where else in all the world is the raw material for almost every line of manufacture so abundant as in the South, and scarcely a week passes without some industry entirely new to this section being organized to turn this raw material into wealth, while of enterprises in established lines of industry many are daily started.

A comparison of the new enterprises organized during the last three years makes a most instructive exhibit.

	1888.	1887.	1886.
Iron furnace companies.....	39	29	28
Machine shops and foundries.....	126	103	68
Agricultural implement factories.....	16	25	11
Flour mills.....	148	135	94
Cotton mills.....	70	77	9
Furniture factories.....	68	55	23
Gas works.....	27	35	24
Water works.....	24	48	48
Carriage and wagon factories.....	63	44	16
Electric light companies.....	123	83	34
Mining and quarrying enterprises.....	460	554	274
Wood-working factories, including saw and planing mills, sash and door factories, stave factories, &c.....	796	726	448
Ice factories.....	57	56	50
Canning factories.....	228	84	13
Stove foundries.....	143	169	53
Brick works.....	40	71	26
Miscellaneous iron wks., roll'g mills, pipe wks., &c.....	37	36	13
Cotton compresses.....	27	18	4
Cotton-seed oil mills.....	1,039	992	439
Miscellaneous enterprises not included in foregoing.....	3,618	3,430	1,575
Total.....			

These figures show 3,618 new enterprises during 1888, against 3,430 in 1887, and 1,575 in 1886.

Summing up the amount of capital and capital stock represented by our list of new enterprises and the enlargement of old plants during 1888, we have:

Alabama.....	\$9,413,000
Arkansas.....	8,423,000
Florida.....	4,731,000
Georgia.....	14,205,000
Kentucky.....	28,807,000
Louisiana.....	6,356,000
Maryland.....	1,967,000
Mississippi.....	1,068,000
North Carolina.....	7,359,000
South Carolina.....	4,813,000
Tennessee.....	11,159,000
Texas.....	17,034,000
Virginia.....	12,774,000
West Virginia.....	10,114,000
Total.....	\$168,801,000

The number of new industrial enterprises organized in the South during the last three years, or since

January 1, 1886, of which the MANUFACTURERS' RECORD has given full particulars, is over 8,600, divided as follows:

Iron furnace companies.....	76
Agricultural shops and foundries.....	297
Agricultural implement factories.....	32
Flour mills.....	359
Cotton mills.....	156
Furniture factories.....	146
Gas works.....	86
Water works.....	214
Carriage and wagon factories.....	123
Electric light companies.....	239
Mining and quarrying enterprises.....	1,194
Lumber mills, including saw and planing mills, sash and door factories, stave factories, &c.....	1,070
Ice factories.....	203
Canning factories.....	323
Stove foundries.....	16
Brick works.....	365
Miscellaneous iron works, rolling mills, pipe works, &c.....	117
Cotton compresses.....	86
Cotton-seed oil mills.....	49
Miscellaneous enterprises not included in foregoing.....	3,430
Total.....	8,623

In three years 8,623 new industrial enterprises have been reported for the South, with full particulars as to their location, character of business, &c., in the MANUFACTURERS' RECORD, while hundreds of smaller ones, such as portable saw mills, Gins, &c., which are not included in this list, have been started. In addition a very large proportion of the manufacturing and mining concerns of the South have greatly enlarged their plants without being given in this list, which includes only new enterprises.

In the following list we give the name, location and character of business of the new enterprises projected during the three months ended December, 1888, and existing establishments rebuilt (after being burned) or enlarged, having given in previous issues the list for the first nine months of the year:

LOCATION.	NAME.	BUSINESS.
Arbacochee.....	Anna Howe Gold Mfg. Co.	Mining.
Anniston.....	Anniston Pipe Works	Increased Capital.
Anniston.....	Anniston Water Supply Co.	Water Works.
Anniston.....	Taylor & Son.....	Fire-brick Works.
Anniston.....	U. S. Rolling Stock Co.....	Car Spring Works.
Anniston.....	Levin.....	Nail Mill & Machine Shop.
Bear Creek.....	Ellis & Frederick.....	Saw M.L.
Bessemer.....	Bessemer Iron & Steel Co.	Increased Capital.
Bessemer.....	Bessemer Iron & Steel Co.	Coke Ovens.
Birmingham.....	Pioneer Mfg. & Mfg. Co.	Sec. Furn. and Rel. Mill.
Birmingham.....	H. M. Caldwell and others.....	Electric Light Works.
Birmingham.....	Valcan Coal & Coke Co.	Coal Mining, Coke, &c.
Birmingham.....	East Birm. Sad Iron Co.	Knagrod Works.
Birmingham.....	J. K. & G. Smith.....	Ad. Mining Machinery.
Birmingham.....	Southern Electric Co.	Electrical Works.
Birmingham.....	Birm. Gas & Elec. L't Co.	Increased Capital.
Birmingham.....	New South Publishing Co.	Printing, &c.
Birmingham.....	Blue Creek Mining Co.	Coal Mining.
Birmingham.....	Birm. Bridge & Bolt Works	Increased Capital.
Birmingham.....	Baxter Stove Works.....	Stove Works.
Birmingham.....	Vir. & Ala. Coal Co.	Mining.
Birmingham.....	Mass Back Gold Mining Co.	Mining.
Birmingham.....	Birm. Bridge & Bolt Wks.	Enlarge Works.
Birmingham.....	Birm. Fire Brick Works.....	Electric Plant.
Birmingham.....	Alabama Iron Works.....	Additional Machinery.
Birmingham.....	Enterprise Mfg. Co.	Cotton Mill.
Birmingham.....	M. O. Smith.....	Printing, &c.
Blotton.....	Cahaba Coal Mining Co.	Enlarge Mining.
Bluffton.....	Bluffton Iron Ore Co.	Furnace.
Brown.....	Lumbard Bros.	Lumber Mill.
Clay County.....	Carr.....	Grist Mill.
Decatur.....	New York Contract Co.	Gas Works.
Demopolis.....	John C. Webb.....	Ice Factory.
Ensley City.....	Tenn. Coal, Iron & R. R. Co.	Electric Light Plant.
Florence.....	W. K. Tyne.....	Medicine Factory.
Florence.....	Geo. E. Bennie Mfg. Co.	Bucket & Churn Factory.
Florence.....	Poster Mfg. Co.	Hardware.
Florence.....	Keynote.....	Saw Mill.
Florence.....	J. W. Nichols & Co.	Flaming Mill.
Florence.....	W. E. Bishop & G. D. Enslar	Sash and Door Factory.
Florence.....	Flor. Elec. L't & Pow. Co.	Improved Plant.
Fort Payne.....	Fort Payne Coal & Iron Co.	Furnaces, &c.
Gadsden.....	Geo. Greer.....	Hardware Factory.
Gadsden.....	Etowah Mining Co.	Ore Mining.
Gadsden, near.....	G. Mudgett & Co.	Lime Works.
Gadsden.....	Felix Leonard.....	Grist Mill.
Gate City.....	W. C. Jones & Co.	Furniture Factory.
Gate City.....	C. M. Baugh.....	Ore Mining.
Gate City.....	Fred Slom.....	Furnace.
Geneva.....	Morrison & Bro.	Saw Mill.
Georgiana.....	R. B. Mills.....	Shoe & Harness Factory.
Gravella.....	G. W. Wilcox & Co.	Mill.
Greensport.....	Gadsden Iron Co.	Ore Mining.
Huntsville.....	North Alabama Coal Oil Co.	Ore Mining, &c.
Huntsville.....	Gas & Mining Co.	Basket Factory.
Ironston.....	Clifton Iron Co.	Repair Furnace.
Jasper.....	Jasper Lumber Co.	Saw and Planing Mill.
Letohatchie.....	W. A. Brown.....	Grist Mill.
Loachapoka.....	J. F. Williamson and others.	Hosiery Factory, &c.
Loachapoka.....	A. J. Herring.....	Saw Mill.
Manchester.....	Manchester Fertil. Putty, Grind. & Lime Mfg. Co.	Fertilizer Factory, &c.
Manchester.....	Grind. & Lime Mfg. Co.	Grindstone Factory, &c.
Mobile.....	A. C. Danner and others.....	Paving Block Factory.
Mobile.....	Thomson-Houston Elec. Co.	Electric Plant.
Mobile.....	Mobile Shingle & Mfg. Co.	Manufacturing, &c.
Mobile.....	Mobile Brewing Co.	Brewery.
Montgomery.....	The Brush Electric Light & Power Co.	Enlarged Plant.
Montgomery.....	Southern Cotton Oil Co.	Oil Refinery.
Montgomery.....	Montgomery Brewing Co.	Bottling Works.
Morris.....	Morris Publishing Co.	Printing, &c.
Morrison.....	Gerst & Donaldson.....	Lumber Mill.
New Castle.....	Miller Coal & Railroad Co.	Enlarge Min. O., &c.
New Market.....	Darnaby & Shofner.....	Pencil Slab Factory.
Piedmont.....	T. P. Savage.....	Ore Mining.
Plantersville.....	Tibbets & Son.....	Lumbering.
Renfro.....	T. I. Cowan.....	Saw Mill & W'd-wg. Fac.
Selma.....	Cook & Cline.....	Saw and Shingle Mill and Spoke Factory.
Sheffield.....	A. Shaffer.....	Machine Shop & Foundry.
Sheffield.....	Geo. E. Knowles.....	Knitting Factory.
Sheffield.....	Lady Ensley Furnace Co.	Improved Furnace.
Sheffield.....	Henderson Milling Co.	Flour Mill.
Sheffield.....	Henderson Milling Co.	Cooperage Factory.
Sheffield.....	Shelby In. Wks. Shalb' Iron Co.	Grist Mill.
St. Clair.....	St. Clair Coal & Coke Co.	Remodel Furnace.
Strasburg.....	J. F. Maul.....	Saw Mill.
Troy.....	Troy Fertilizer Co.	Fert. Fac. & Elec. Plant.
Troy.....	Troy Fertilizer Co.	Cotton Seed Oil Mill.
Tuscaloosa.....	D. F. Torbett.....	Electric Plant.
Tuscaloosa.....	D. F. Torbett.....	Ice Factory.

LOCATION.	NAME.	BUSINESS.
Uniontown	City	Water Works.
Verben	Pratt Saw Mill Co.	Additional Machinery.
York	York Wood Mfg. Co.	Wood-working Factory.
Newport	Ala. Fuel, Light & Mfg. Co.	

ARKANSAS.

Batesville	M. McClure	Flour Mill.
Batesville	Ellsworth & Collins Min. Co.	Mining, &c.
Batesville	Ja. Larven, secretary.	Water Works.
Benton county	American Onyx Co.	Mining.
Black Rock		Natural Gas.
Camden	Camden Water Works Co.	Water Works.
Cardens Bottom	E. Wilson	Gen.
Columbus	Wilson & Wilson	Gen.
Fayetteville	Boles & Connor Mercan. Co.	Milling.
Fort Smith	McClelland & Sparks Furni- ture Factory Co.	Furniture Factory.
Fort Smith	Ketchum Iron Co.	Enlarge Works.
Franklin	Williams & Peaback	Flour Mill.
Greenway	Mitch'l, Cochran & Milb'ren, Gin.	
Greenwood, nr.	Western Coal & Mining Co., of St. Louis.	C-al Mining.
Goodman		Grist Mill.
Hamburg	J. E. Kurell	Gen.
Helena	Eastern Arkansas Hedge Co.	Hedge Fences.
Helena	J. M. Terry and others.	Water Works.
Hickory Creek	Eley & Sons	Wagon Shop.
Hot Springs	J. A. Smith	
Kingsland	Southern Pine Lumber Co.	Saw and Shingle Mill.
Little Bay	Little Bay Lumber Co.	Planing Mill.
Little Rock	Press Printing Co.	New Machinery.
Little Rock	Kellogg Min'g & Mill'g Co.	Mining, &c.
Little Rock	Capital City Cider Co.	Bothing Works.
Little Rock	Stewart Coal Co.	Machine Shop.
Little Rock	Ark. Soapstone Mfg. Co.	Soapstone Works.
Marquette	Watkins & Jorski	Mill and Gin.
Mineral Springs	Wheeler	Tannery.
Mississippi Co.	R. A. Blackwell	Saw Mill.
Nashville	Benj. F. Wilco	Broom Factory.
Newport	White Riv. Lum. & Mfg. Co.	Lumber Mill, &c.
Ozan, near	King & McCraw	Saw Mill.
Ozan	Thomas Britt	Furniture Shop.
Ozan	Price	Wagon Factory.
Paragould	Reed & Amberg	Saw Mills.
Perryville	M. G. Smyers	Cotton Gin.
Polk county	Arkansas Development Co.	Mining.
Scott county	Arkansas Petroleum Co.	Petroleum Well.
Toltec		Mill and Gin.
Warren	Thompson & Garrison	Saw Mill.

FLORIDA.

Bluff Springs	Milner Lumbe Co.	Saw Mill.
Carrabelle	Franklin County Lumber Co.	Lumber Mills.
Cedar Key	Florida Ice Co.	Ice Factory.
Crown Point	H. C. Joyce	Canning Factory.
Jacksonville	Jacksonville Elec. Light Co.	Enlarge Plant.
Kissimmee	J. W. Seymour	Saw Mill.
Lakeland	T. Walker	Cigar Factory.
Palatka	Vertres & Co.	Grist Mill.
Pensacola	Pensacola Marine Ry. Co.	Marine Railway.
Pensacola	Sullivan Timber Co.	Enlarge Saw Mill.
Sanford	Edwards, Street & Co.	Printing, &c.
Sao Antonio	Frese & Co.	Cigar Factory.
Summersville	Newsom & Newsom	Brick yard.
Walton county	John & Benj. Chandler	Saw Mill.
Weston	John H. Welsh	Saw Mill.

GEORGIA.

Albany	N. J. Cruger	Wood-working Factory.
Albany	Albany Oil Co.	Electric Light Plant.
Albany		Fertilizer Factory.
Americus	Amer. Preston & Lump- kin R. R. Co.	Enlarge Plant.
Americus	kin R. R. Co.	R. R. Co. Machine Shops.
Americus	Richard M. Stewart	Planing Mill.
Americus	Americus Medicine Co.	Patent Medicine.
Americus	A. J. Hamill	Pottery and Brick Works.
Athens	R. Lucas	Iron Foundry.
Athens	Athens Gas Light Co.	Electric Light Works.
Athens	Athens Fdy. & Mach. Wks.	Double Wks.
Atlanta	Phoenix Planing Mill Co.	Planing Mill.
Atlanta	Southern Baptist Pub. Co.	Printing, &c.
Atlanta	Southern Iron Car Line	Freight Cars.
Atlanta	The American Pub. Co.	Printing, &c.
Atlanta	Atlanta Brewing Co.	Refrigerating Machinery.
Atlanta	Georgia Electric Light Co.	Enlarge Plant.
Atlanta	Southern Cotton Mills	Cotton Mill.
Atlanta	Fulton Lumber & Mfg. Co.	Planing Mill.
Atlanta	Atlanta Glass Works	To Double Glass Works.
Atlanta	W. R. Polk	Machine Shop.
Atlanta	Atlanta Glass Co.	Saw Mill.
Augusta	Polar Ice Co.	Ice Factory.
Augusta	Thomson-Houston Elec. Co.	Electric Plant.
Augusta	Foster & Doughty Com. Co.	Gotton Compress.
Augusta	Narsau Guano Co.	Fertilizer Works.
Augusta		Cotton Compress.
Augusta	Augusta Cotton Factory	Additional Machinery.
Banning	M. R. Wilkinson	Pulp Mill.
Brick Store	E. Elliott and J. T. Taylor	Cotton Seed Oil Mill.
Brunswick	Price & McNabb	Grist Mill.
Brunswick	Charles French	Wood-sawing Mill.
Brunswick	W. A. Jeter	Cotton Mill.
Brunswick	Brun. Wood & Coal Del. Co.	Shingle Mill.
Brunswick	Kennon Mfg. Co.	Woolen Mill.
Brunswick	Belden Cotton Compress Co.	Cotton Compresses.
Brunswick	News Publishing Co.	Printing.
Buford	R. Allen	Saw Mill, &c.
Canton	McAfee & Tolbert	Wood-working Factory.
Canton	J. M. McAfee	Tannery.
Calloodea	J. O. Holmes	Planing Mill.
Cartersville	Richard Jones	Ice Factory.
Cedartown	Cedartown Brick Co.	Brick Works.
Clarksburg	W. D. Hill	Saw Mill.
Columbus	J. H. Gabriel & Co.	Cider Factory.
Conyers	Capt. Collins	Quarrying.
Colloodea	Story & Thompson	Machine Shop.
Covington, nr.	R. L. Simms	Quarrying.
Dawson	Brinn & Bro.	Grist Mill.
Duke	H. C. Williams & Co.	Planing Mill.
Edinham Co.	Shearouse & Bro.	Saw Mill.
Emerson	J. Lang	Malleable Iron Works.
Emerson	E. H. Cody	Paint Factory.
Enville	Roberson Bros.	Saw Mill.
Fayetteville	W. P. Redwine	Tannery.
Forsyth	Griffin Mfg. Co.	Electric Light Works.
Griffin	Griffin Mfg. Co.	Electric Light Machinery.
Greenville	F. M. Ledbetter	Axe and Handle Factory.
Haywood	A. J. Alexander	Handle & Spoke Factory.
Job	J. W. Bailey	Grist Mill.
La Fayette	J. B. Hill	Gin.
La Fayette	Warrenfels & Sons	Pottery.
La Grange	J. L. Sterling	Spoke & Handle Factory.
Mapleton	T. J. Low	Mill.
Macon	Macon Tele. Printing Co.	Guano Factory.
Macon	Jeter & Boardman Water & Gas Assn.	Printing, &c.
Macon		Increased Capital.
Macon	Consumers' Gas Co.	Double Works.
Macon	Palmer Mfg. Co.	Cooperage Works.
Macon	Manchester Mfg. Co.	Cotton Mill.
Marietta	Marietta Paper Mfg. Co.	Twine Factory.
Metcalf		Saw Mill.
Mineral Bluff	J. A. Davies, of Nelson, Ga.	Barite Quarrying.
Myrtle	D. Houser	Hardie Factory.
Pearson	Mallett Bros.	Saw Mill.
Red Clay	F. A. Sloan & Co.	Double Furniture Factory.
Richmond	Samuel Carnes	Planing Mill.
Rockmart	Toledo Sierra Mining Co.	Mining.
Rome	Etowah Mfg. Co.	Increased Capital.
Rome	N. W. Ga. Coal & Iron Co.	Mining, &c.
Rome	Car'l Ir'n, L'nd & Tim. Co.	Mining, &c.
Rome	Rome Nail Mfg. Co.	Nail Mill.
Rome	Philbrick Coop. & Mfg. Co.	Cooperage Works.

Rome	Theo. Farrell	Glass Works.
Rome	Davis & Cummings	Iron Foundry.
Rome	Rome Fdy. & Mach. Wks.	Enlarge Works.
Rome	J. B. Pa ton	Sash & Door Factory.
Savannah	Jacob Rauer and others.	Brewery & Bottling Wks.
Savannah	Southern Pine Co.	Lumbering.
Savannah	Savannah Electric Light Co.	Enlarge Plant.
Savannah	R. B. Cas ell	Wood Saw Mill.
Sparks	Patterson & Allen	Printing, &c.
Sparks	W. F. & E. A. Rosier	Printng, &c.
Stevens	Pottery	Enlarge Pottery Works.
Tallapoosa	J. A. Reynolds and others.	Chair Factory.
Tallapoosa	Posa Mfg. Co.	Saw Mill.
Tallapoosa	Tallapoosa Glass Co.	Glass and Gas Works.
Tallapoosa	Camille Gold Mining Co.	Enlarge Min. Operations.
Tate	Georgia Marble Co.	Add. Quarrying Machy.
Thomaston	Georgia Gem & Mining Co.	Mining.
Thomaston	Reynolds, Harg'ys & Davis	Planing Mill.
Trion	Trion Mfg. Co.	Brick Works.
Trion	Trion Mfg. Co.	Saw and Planing Mill.
Toccoa	T. S. Davis	Chair Factory.
Tonnell Hill	C. A. Hunt	Gin.
Walden	J. B. Wills	Gin.
Warrior	Martin Toole	Saw Mill.
Wellingham	Alford & Sloan	Saw Mill.
Wenona	Dooly Lumber Co.	Saw Mill.
West Point	Planters' Oil & Mfg. Co.	Electric Light Plant.

KENTUCKY.

Alexandria	Gubser & Co.	Flour Mill.
Ashland	U. S. Incan. Gas Lamp Co.	Lamps, &c.
Ashland	Henry Herman	Enlarge Furniture Factory.
Ashland	McLaughlin Lumber Co.	Lumber Mill.
Ashland	Coeur d'Alene Gold Min. Co.	Mining.
Benton	Pool & Story	Printing, &c.
Birdsville	Birdsville Coal & Imp. Co.	Coal Mining.
Caldwellburg	Murphy, Barber & Co.	Remodel Distillery.
Clemmont	Block Mfg. Co.	Woolen Mill.
Covington	Arlington Tile Co.	Tile and Pottery Works.
Covington	American Wire Nail Co.	Increased Capital.
Covington	Bee Hive Coal, Lumber & Gas Co.	Mining, &c.
Covington	Martin Mining Co.	Mining.
Covington	Amer. Railway Adv. Co.	Manufacturing, &c.
Covington	Porter Iron Roof & Cor. Co.	Iron Roofing.
Covington	D. J. McNamara	Whip Factory.
Ford	Ford Lumber & Mfg. Co.	Saw Mill.
Ford	Asher Bros.	New Saw Mill.
Fountain Run	E. Grooms & Co.	Flour Mill.
Fulton	A. C. Caldwell	Enlarge Saw Mill.
Gilbert's Creek	Duddard & Bros.	Flour Mill.
Hardinsburg	H. A. Oelze	Remodel Flour Mill.
Harrodsburg	Harrodsburg Cog'g & Feed Co.	Tobacco Factory.
Harrodsburg	Louisville South'n R. R. Co.	Machine Shops.
Harrodsburg	Harrodsburg Water Co.	Water Works.
Hartford	John R. Phipps & Co.	Remodel Flour Mill.
Hartford	Potter & Condit	Planing Mill.
Henderson	W. M. Cummock and others.	Furniture Factory.
Lancaster	Potts Bros.	Improved Flour Mill.
Lebanon	Lebanon Water Works Co.	Water Works.
Lewistown	J. C. Pell & Son	Enlarged Mill.
Linton	Wm. Tarr Co.	Distill'g & Cooperage Wks.
Lily	Wm. Welsh	Coal Mining.
Louisville	Sitzel Bros. & Co.	Distillery.
Louisville	Ohio Falls Oak Leather Co.	Tannery.
Louisville	Louisville Cotton Mill Co.	Increased Capital.
Louisville	E. Bull Medicine Co.	Increased Capital.
Louisville	Louisville Bagging Co.	Enlarge Factory.
Louisville	Central Refrig. Com. Co.	Ice Factory.
Louisville	Atlas Mineral Refining Co.	Mining, &c.
Louisville	Falls City Malleable Iron & Steel Co.	Iron and Steel Works.
Louisville	Parkland Mfg. Co.	Candy Factory.
Louisville	Kentucky Novel. Spec. Co.	Novelties.
Louisville	Louisville Preserving Co.	Preserving Factory.
Louisville		Cement Mill.
Louisville	K. & I. Cement Co.	To Double Cement Mill.
Louisville	Eclipse Woolen Mills	Woolen Mill.
Louisville	Edman Grocery & Feed Co.	Corn Mill.
Louisville	City Brewing Co.	Enlarge Brewery.
Louisville	Natural Rock Gas Co.	Gas Piping.
Louisville	Central Pass. Railway Co.	Electric Plant.
Louisville	Elkh' n Co'l, Coke & Ir'n Co.	Coal and Ore Mining.
Louisville	Western Coal & Coke Co.	Coal Mining.
Louisville	Schaeffer & Meyer Brew. Co.	Brewery.
Louisville	Louisville Gas Co.	Fuel Gas.
Louisville	Wooten & Son	Planing Mill.
Louisville	C. B. Paul	Enlarge Saw Mill.
Louisville	Louisville Steam Bakery	Bakery.
Louisville		Wood-working Factory.
Louisville	Gardner & Cross	Buggy Factory.
Kentucky	John T. Wilder, of Roan Mountain, Tenn.	Saw Mill.
Madisonville	H. Holoman	Enlarge Tobacco Factory.
Madisonville	J. M. Pemberton	Enlarge Tobacco Factory.
Madisonville	Margel M. Slaton	Cigar Factory.
Madisonville	Davis & Bingham	Improved Flour Mill.
Maysville	Mays, Elec. L. & Pow. Co.	Electric Light Plant.
Newport	Newport Electric Light Co.	Electric Light Works.
Nicholasville	W. A. Jeff	Flour Mill.
Owensboro	Joseph Hardy & Co.	Tobacco Factory.
Paris	Paris Electric Lighting Co.	Electric Light Works.
Pineville	R. A. Hooton & Co.	Plan'g Mill & Sash Fcty.
Pineville	Andy Johnson & Crow Carr.	Planing Mill.
Pineville	E. Kice	Remodel Flour Mill.
Richmond	Richmond Gas Co.	Enlarge Plant.
Riprville	J. W. Bond	Remodel Flour Mill.
Rockport		Flour Mill.
Roxington	Buckner Bros. & Tully	Flour Mill.
Sacramento	W. D. Gish & Co.	Flour Mill.
Salvina	Sea & Kennedy	Remodel Flour Mill.
Sidney	J. W. Bond	Remodel Flour Mill.
Uniontown	John H. Barrett & Co.	Enlarge Tobacco Factory.
Waco	Eureka Mining Co.	Printing Works, &c.
Walton	Brittenham	Brick Yard.
Williamsburg	Jones Lumber Co.	New Saw Mill.

LOUISIANA.

Abberville, near	Joseph Dooley	Sugar Mill.
Alexandria	New Orleans Artesian Well Works Co.	Artesian Well.
Alexandria	Weems & Hardy	Sugar Refinery.
Baldwin	Baldwin & Co.	Sugar Mill.
Baton Rouge	Walter A. O'Neil	Sugar Mill.
Baton Rouge	Baton Rouge Yarn Mill	Yarn Mill.
Benham	Vista Lumber Co.	Saw Mill.
Charleston	Charleston Saw Mill Co.	Saw Mill.
Conway	O. O. Andrews	Grist Mill.
Covington	M. J. Deady and others	Pottery Works.
Farmerville	E. Roan	Gin.
Farmerville	Frank Dillard	Mill and Gin.
Farmerville, nr.	F. L. Dillard	Gin.
Franklin	Lewis & Kyles	Saw Mill.
Franklin	Joseph Brigg	Sugar Mill.
Franklin	McLaury, Underwood & Scott	Sugar Mill.
Girard, near		Canning Factory.
Houma	Terresbonne Canning Co.	Canning Factory.
Houma	Oscar Darpit	Saw Mill.
Iberia parish	A. L. Monot	Improved Sugar Refinery.
Jeanerette, nr.	P. E. Sausdager and others.	Canning Factory.
Lake Charles	L. Williams, pres.	Canning Factory.
Lamourie Bdg.	D. S. Ferris	Enlarge Sugar Refinery.
Lecompte	Lecompte Lumber Co.	Shingle Mill.
Loreauville, nr.	John F. Hoffman	Sugar Mill.
Marchach, near	J. D. Houston	Sugar Mill.
Marksville	J. M. Edwards	Grist Mill.
Monroe	Mon. Cot. Yarn & Bag. Co.	Yarn and Bagging Mill.
Monroe	D. A. Beard, Jr.	Grist Mill.
Monroe	Mon. Iberia	Double Sugar Mill.
New Iberia	Calder & Creary	Drugs.
New Orleans	Southern Drug Co.	Drugs.

New Orleans	F. Fisher	Furniture Factory.
New Orleans	Marine Hospital Service	Electric Plant.
New Orleans	Eureka Steam Bag Factory	Enlarge Works.
New Orleans	Crescent City Brewing Co.	Electric Plant.
New Orleans	Bon Homme Mining Co.	Gold Mining.
New Orleans	Graham Pat. Art. Stone Co.	Artificial Stone Works.
New Orleans	Lechtentag Pat. Stone Co.	Artificial Stone Factory.
New Orleans	Pelican Brewing Co.	To Enlarge Brewery.
New Orleans	Amer. White L'd & Col. Wks.	White Lead, &c.
New Orleans	Wm. Zettman	Planing Mill.
New Orleans	D. A. Hackney	Planing Mill.
New Orleans	Excelsior Packing Co.	Packing Factory.
New Orleans	Southern Hosiery Mills	Additional Machinery.
Pattersonville	Trellew & Co.	Enlarge Saw Mill.
Pattersonville, nr.	S. Clark & Bro.	Sugar Mill.
Plain Dealing	R. H. Curry	Canning Factory.
Plaquemine	Plaques, Lumb & Imp. Co.	New Saw Mill.
Port Allen, nr.	J. L. Harris	Sugar Mill.
Robeline		Wood-working Factory.
Shreveport	Shreveport Gazette Pub. Co.	Printing, &c.
Spearville, nr.	Lopez McDonald	Saw Mill.
Spearville, nr.	Joseph Carroll	Mill and Gin.
Tangipahoa	M. S. Newsom & Sons	Enlarge Saw Mill.
Thibodaux		Canning Factory.
Vermillion par.	Martin & Bagley	Sugar Mill.

MARYLAND.

Baltimore	Aaron Brag	Furniture Factory.
Baltimore	Oppenheim, Oberdorff & Co.	Overall Factory.
Baltimore	Sp'g Gard'n Coal & Goke Co.	Coal Mining, &c.
Baltimore	Baldo, Suit & Novelty Co.	Clothing Factory.
Baltimore	Friedel & Erdman	Additional Machinery.
Baltimore	Chas. T. Holloway	Enlarge Factory.
Baltimore	Maryland Preserving Co.	Preserving Factory.
Baltimore	Becker & Co.	Cigar Factory.
Baltimore	O'Connor, Weaver & Co.	Brush Factory.
Baltimore	Henry Sel'm & Co.	Enlarge Glass Works.
Baltimore	Platt & Co.	Canning Factory.
Baltimore	R'chard Sauer Mfg. Co.	Electric Plant.
Baltimore	Roland P. ow Co.	Foundry.
Baltimore	Crane Machine Co.	Agricultural Implemen- ts.
Baltimore	Norton Bros.	Can Factory.
Baltimore	South Balt. Brick & Tile Co.	Brick Works.
Baltimore	Meadow Branch Anthrac. & Cumberland Coal Co.	Coal Mining.
Baltimore	Marvland Elect. & Stor. Co.	
Baltimore	Booth Iron Mixture Co.	Manufacturing, &c.
Baltimore	Bradley Fertil. & Chem. Co.	Fertilizer Works.
Barton	Joan Somerville	Grist Mill.
Brooklyn	Budeshim & Mewshaw	Lumber Mill.
Burrville	J. H. Shawley	Canning Factory.
Catoctin Fur.	Catoctin Mountain Iron Co.	Furnace.
Catoctin Fur.	Catoctin Patat Co.	Ochre Mining and Mill.
Centerville	Eastern Shore Hedge Co.	Hedge Fences.
Clarksburg	Levi L. Watkins	Remodel Flour Mill.
Cumberland	Payne Spring Tanning Co.	Tannery.
Deer Park, nr.	W. H. Thompson	Quarrying.
Derwood	Lyddane, Jones & Co.	Found'y & Machine Shop.
Elkton	Scott Fertilizer Co.	Increased Capital.
Emmitsburg	Geo. Late	Creamery.
Frederick	Henry Lyons	Soap Factory.
Frederick	Frederick Seash' n Hos. Co.	New Factory.
Frostburg	Big Vein Coal Co.	New Mine.
Greensboro	Phila. Coach Supply Co.	Spoke Factory.
Greensboro	Jas. S. Richards	Carriage Factory.
Greensboro	Wm. C. Satterfield	Canning Factory.
Havre de Grace	John E. DuBois	Box Factory.
Hillsboro	John W. Knotts	Flour Mill.
Hope	Wm. H. Cecil	Tile Factory.
Kennedysville	Shaffer & Davies	Creamery.
Lakeland, near	Oakland Coal Co.	Coke Ovens.
Prospect	Wm. Davis	Creamery.
Ridgely	Day Bros.	To Enlarge Cas'g Fcty.
Rising Sun	J. A. Hunter	Flour Mill.
Salisbury	Wm. H. Stevens	Canning Factory.
Salisbury	Grier Bros.	Iron and Brass Foundry.
Salisbury		Canning Factory.
Sandy Springs	J. H. Henderson	Remodel Flour Mill.
Sakoma, D. C.	Wm. H. Sleeper	Carriage Factory.
Towson	Idea Lime & Stone Co.	Lime Works.
Union Bridge	West'n Maryland R. R. Co.	Enlarge Machine Shop.
Utica	John G. Rogers	Remodel Flour Mill.
Wash'n, D. C.	Smith Cycle Co.	Increased Capital.
Wash'n, D. C.	Colum. Conduit & Cable Co.	
Wash'n, D. D.	National Pressed Brick Co.	Improve Works.

MISSISSIPPI.

Bay St. Louis

LOCATION.	NAME.	BUSINESS.
Granite Falls	Granite Falls Mfg. Co.	Electric Light Plant.
Henderson	J. H. Winder, of Raleigh.	Quarrying.
Hickory	Brush Electric Co.	Electric Light Plant.
Hickory	Shuler & Shuford.	Wood-working Factory.
Jonesboro	G. A. Taylor.	Shingle Mill.
Kings Mountain	Kings Mount. Tin Mfg. Co.	Stamp Mill.
Kinston	J. M. White.	Saw and Shingle Mill.
Lemon Springs	John W. Scott.	Saw Mill.
Liberty	Burgess Bros.	Cotton Mill.
Little Riv. Aca.	John M. Hodges.	Shingle Mill.
Marion, near	Hansen & Smith.	Brick Wks., Saw Mill, &c.
Macon	Entrep. Shing. & Lumb. Co.	Saw Mill.
Monroe	Long Island Cotton Mills.	Add. Lateral Machinery.
Morganton	Morganton Cotton Mfg. Co.	Electric Light Plant.
Mount Tabor	C. McSpivey.	Saw Mill.
New Bern, nr.	A. Gallup.	Shingle Mill.
New Bern	Edward & Clark.	Machine Shop.
New Bern	D. Congdon & Son.	Planing Mill.
New Bern	Marion Improvement Co.	Granite & Slate Quarrying
Old Fort	J. C. Goodman.	Tannery.
Peachland	Lyles Bros. & Co.	Brick Yard.
Peachland	Seppark, Hicks & Co.	Iron Fdy. & Agr. Impl.
Pick Kettle	K. R. White & Co., of New	Shingle Mill.
Raleigh	North Caro. Wagon Fcty.	Wagon Factory.
Randolph	Stafford Gold Mine.	Stamp Mill.
Red Springs	Brooks Bros.	Planing Mill.
Red Springs	W. D. Mendenhall.	Sash and Door Fcty.
Ridgely	A. H. Motley & Co.	Enlarge Tobacco Factory.
Rocky Mount	Rocky Mount Mills.	Additional Cotton Mill.
Rowan county	Southern Bell Gold Mine.	Mining.
Rutherfordton	J. W. Harlin and others.	Electric Plant.
Salem	Salisbury Brick Co.	Grist Mill.
Salisbury	C. A. Rice & Co.	Tobacco Factory.
Salisbury	Rowan Knitting Co.	Knitting Factory.
Salisbury	Jas. B. Lanier.	Canning Factory.
Salisbury	Holmes & Miller.	Tobacco Factory.
Salisbury	Miller & Osborne.	Quarrying.
Shelby	City.	Printing.
Statesville	C. J. Sarratt and others.	Corundum Mining.
Sylva	W. A. Elison and others.	Kaolin Mining, &c.
Tarboro	Tarboro Oil Co.	Enlarge Cotton Oil Mill.
Taylorville	Campbell & Co.	Saw Mill & Sash Factory.
Union coun. y.	Pfifer & Black Gold Mine.	Mining.
Wadesboro	Wadesboro Brown Stone Co.	Stone Saw Mill.
Wadesboro	Wadesboro Silk Co.	Enlarge Silk Factory.
Winston	W. B. Ellis & Co.	Tobacco Factory.

SOUTH CAROLINA.

Blacks	Garcia & Co.	Iron ore Mining.
Blacks	Broad Riv. Cotton Mill Co.	Cotton Mill.
Caughmans	F. S. Black.	Saw Mill.
Centerville	Wylie Teems.	Gin.
Central	Geo. M. Maddox.	Gin.
Charleston	Asheboro Phosphate Co.	Enlarge Works.
Charleston	F. C. Fishburne.	Enlarge Fertilizer Works.
Cordens	A. Ginter & Bro.	Gin.
Cordens	J. P. Johnson.	Gin.
Ellenton	W. E. Ashley.	Grist Mill and Gin.
Etheredge	W. H. Kinard.	Saw Mill.
Fingerville, nr.	S. D. Moore.	Saw Mill.
Florence	Covington Bros.	Carriage Shop.
Fort Motte	Conaree Lumb. & Ven. Co.	Saw and Veneer Mill.
Fulton	Margan & McLaurin.	Lumber Mill.
Gaffney City	Gaffney City Mfg. Co.	Cotton Mill.
Greenville	W. A. Edwards.	Saw and Grist Mill.
Greenville	J. C. Boyd.	Cider & Vinegar Factory.
Horn Shoe	Gregg.	Phosphate Mining.
Longtown	Lewis Wilds.	Mill.
Mount Holly	Phosphate Mining.	Phosphate Mining.
Parrot Crk., in	Farmers' Mining Co., of	Phosphate Mining.
Pisgah	Columbia, S. C.	Saw Mill.
Rail Hill	Alfred Doolittle and others.	Sash and Door Factory.
Sikehatchie	Godfrey & Spencer.	Saw Mill.
Spartanburg	L. C. Cannon.	Brick Yard.
St. Andw's Par.	Eutawville Railroad Co.	Phosphate Mining.
Sumter	Eutawville Railroad Co.	Machine Shop.
Sumter, near	J. R. Stokes.	Rice Mill & Canning Fac.
Walkerboro	S. C. Miller & Bro.	Cotton Gin.
Walnut Grove	T. K. Elliott.	Gin.
Winnabow	Winnabow Cotton Mills.	Cotton Mill.
Yorkville	York Enterprise.	Printing.

TENNESSEE.

Alexandria	Botts & Flippin.	Planing Mill.
Athens	Markley & Thurston.	Spoke and Shingle Mach.
Bethany	J. B. Morrell.	Remodel Flour Mill.
Bruff City	Jacob Thomas.	Flour Mill.
Byron	Andrew Chambers.	Flour Mill.
Calhoun	C. A. Farrington.	Flour Factory.
Carbondale	Bailey Johnson.	Saw Mill.
Chattanooga, nr. G. H. Cherry.		Basket Factory, &c.
Chattanooga	Chattanooga Compress Co.	Cotton Compress.
Chattanooga	Pennock Battery Electric	Electric Light Plants, &c.
Chattanooga	Light & Imp. Co.	
Chattanooga	W. C. Heyser & Co.	Enlarge Saw Mill.
Chattanooga	Lookout Ice & Cold S'or. Co.	Increase Capital.
Chattanooga	Loomis & Hart Mfg. Co.	Add. Lumber Machinery.
Chattanooga	City Water Co.	Enlarge Capital.
Chattanooga	Chattanooga Factory.	Shirt Factory.
Chattanooga	Tennessee Paint, Roofing	Artificial Stone.
Chattanooga	& Paving Co.	
Chattanooga	Ambrose Wagner.	To Double Foundry.
Chattanooga	J. Henry Smith.	Bottling Works.
Chattanooga	S. E. Green.	Matress Factory.
Chattanooga	Tenn. Fruit & Cider Co.	Vinegar Factory.
Chattanooga	Alfred Webb.	Boiler Works.
Chattanooga	Chattanooga Ore Co.	Iron Ore Mining.
Chattanooga	Chatt. & Highland Park	Electric Plant.
Chattanooga	Electric Street Ry. Co.	
Clarksville	Emmitt Morrow.	Tobacco Plant.
Cleveland	Norvill.	Sash and Blind Factory.
Cleveland	Cleveland Chair Co.	Chair Factory.
Cleveland	Geo. Carlyle & Sons.	Enlarge Fire Brick Wks.
Columbia	John Ankerman.	Machine Shop.
Columbia	W. R. Craig and others.	Agricultural Implements.
Columbia	A. C. Green.	Wire Fence Implements.
Columbia	Lamb & Smith.	To Double Planing Mill.
Cooperstown	Geo. T. Parrish.	Saw Mill.
Cumby Gap	Watts Bros.	Coal Mining.
Cumby Gap	G. R. Eager.	Coal Mining.
Davton	Gillespie & Leggate.	Flour Mill.
Davton	A. G. Slawson.	Furniture Factory.
Dunlap	Chambers Mfg. Co.	Saw and Planing Mill.
Elkton	Chambers.	Flour Mill.
Friendville	Hackney & Co.	Brick Yard.
Graysville	Fox Coal & Coke Co.	To Build Coke Ovens.
Hartsville	A. S. Reeves.	Flour Mill.
Holder's Store	W. R. Elder.	Saw and Flour Mill.
Jackson	Jacob Weiss.	Spoke Factory.
Jackson	C. Owen & Co.	Enlarge Brick Yard.
Jesse		Saw Mill.
John	P. Griffin.	Flour Mill.
Knoxville	Hercules Marble Co.	Enlarge Plant.
Knoxville	Hercules Marble Co.	Marble Quarrying.
Knoxville	Metter & Ziegler.	Port-kicking Houses.
Knoxville	Knox Hardwood Mfg. Co.	Furniture Factory.
Knoxville	R. A. Hooten.	Planing Mill.
Knoxville	Tenn. Coal Mining Co.	Coal Mining.
Knoxville	Tenn. Coal & Iron Min. Co.	Mining, &c.
Knoxville	Tennessee Slate Co.	Quarrying.
Knoxville	Knoxville Electric Light	Enlarge Plant.
Knoxville	& Power Co.	
Knoxville	Knoxville Woollen Mills.	Enlarge Mill.
Knoxville	Knox Brass & Iron Works.	Additional Machinery.
Lewisburg	Joseph McBride.	Handle Factory.

LOCATION.	NAME.	BUSINESS.
Liberty	Liberty Roller Mill Co.	Flour Mill.
Loudon	A. W. Ward & Co.	Spoke & Handle Factory.
Loudon	James Acheson.	Spoke Factory.
Lynchburg	Lynchburg Roller Mills.	Flour Mill.
Manchester	S. Gould.	Broom Factory.
Manchester	H. B. North.	Broom Factory.
Manchester	Manchester Mfg. Co.	Barrel Factory.
Marcella Falls	Clayton & Renfro	Mill and Tannery.
McAllister	J. W. Blackford.	Saw Mill.
McMinnville	McMinnville Elect. Light	Electric Plant.
Memphis	& Power Co.	
Memphis	DeSoto Oil Co.	New Cotton Oil Mill.
Memphis	Memphis Furniture Co.	Furniture Factory.
Memphis	Union Wagon Co.	Wagon & Barrel Factory.
Memphis	Dixie Mill Co.	
Memphis	Aldrich Sewing Machine Co.	
Memphis	E. R. Blanchard.	Flour Mill.
Memphis	Blackley & Chandel.	Furniture Factory.
Memphis	Electric Smelting Co.	Smelting, &c.
Mitchell	Blackley & Damon.	Flour Mill.
Monternum	J. P. Randolph.	Spoke Factory.
Morgan county	Oliver Coal & Mining Co.	Mining.
Mortimer	Brient Bros.	Saw Mill.
Nashville	Brient Bros.	Add. Cotton Mill Mach'y.
Nashville	Penn. Pneumatic Motor Co.	
Nashville	Garland L'd. Min. & Im. Co.	Mining, &c.
Nashville	Nashville Light & Pow. Co.	Enlarge Plant.
Nashville	Geo. Moore.	Sash and Door Factory.
Nashville	Edgely & Nash. Mfg. Co.	To Double Furniture Fac.
New River	Rodman & Archer.	Saw Mill.
Onclem, near	Puckett & Chandel.	Lumber and Stave Mill.
Pulaski	Pulaski Ice Co.	Ice Factory.
Pulaski	Neely & McCord.	Woollen Mill.
Rogersville	Silas H. Hale.	Planing Mill.
Sadlersville	W. A. Fort.	Tobacco Factory.
Sampson	E. Dykes.	Flour Mill.
Scott county	Williams Creek Coal &	Mining, &c.
Shelbyville	H. S. Taylor & Co.	Tobacco Factory.
Shelbyville	Darrett & McMurray.	Tobacco Factory.
Sparta	Bon Air Coal Co.	New Coal Mine.
Springfield	Lane Bros.	Tobacco Factory.
Springfield	Sequatchie Hoe & Tool Co.	Flour Factory.
Stribling	La Grange Iron Co.	Charcoal Ovens.
Stribling	Massy & Scott.	Saw Mill.
Tulahoma	Tulahoma Woollen Mills.	Woollen Mill.
Tulahoma	Progressive Age Pub. Co.	Printing.
Union City	Wilde, Moore & Co.	Flour Mill.
Vernon	Adams & Fisher.	Flour Mill.
Winchester	Arkledge Bros.	Distillery.
Winchester	Winchester Mfg. Co.	Wood-working Factory.

TEXAS.

Abilene	Farmers' Alliance.	Flour and Corn Mill.
Abilene	Charles Neger.	Tannery.
Amarillo	Martin Byrnes.	Brick Yard.
Austin	Phoenix Cigar Mfg. Co.	Gin. Factory.
Balling	Miller Bros.	Grist Mill and Gin.
Beaumont	Oliver & Sternberg.	Planing Mill.
Beaumont	Texas Tram & Lumber Co.	Planing Mill.
Beaumont	Beaumont Lumber Co.	Enlarge Planing Mill.
Brenham	F. W. & A. R. Schureberg.	Wagon and Plow Factory.
Burnet	Texas Capital Granite Co.	Additional Machinery.
Burnet	Frank Schraud & Charles	Ice Factory.
Burnet	Schmidt.	
Canadian	W. S. Decker.	Creamery.
Coleman	Wilkes & Atter.	Printing, &c.
Colmesneil	J. B. Gardner.	Saw Mill.
Colmesneil	Yellow Pine Lumber Co.	Saw Mill.
Corsicana	Texas Investment Co.	Mining, &c.
Cuero	Buchel Milling Co.	Cotton-seed Oil Mill.
Dallas	Dallas Ice Co.	Double Factory.
Dallas	Dallas Cotton Mills.	Electric Plant.
Dallas	Munger Improved Cotton	Wood-working Mach'y.
Dallas	Machine Mfg. Co.	
Dallas	Non Corro. Boiler Comp. Co.	Boiler Compound.
Dallas	Texas Feed Water Heater	Feed Water Heaters.
Dallas	& Purifier Co.	
Dallas	Boyd & Webster.	Planing Mill.
Dallas	Dallas Scrap & Mfg. Co.	Soap Factory.
Dallas	Dallas Elect. Light, Pow.	Enlarge Plant.
Dallas	M. K. & Tex. R. R. Co.	Boiler Shops.
Denison	Denton Mill & Elevator Co.	Corn Mill.
Eagle Pass	Eagle Pass Irrigation &	Irrigating Canals.
Eagle Pass	Water Works Co.	
El Paso	J. C. Carrera.	Ore Mining.
El Paso	Pecos Irriga. & Invest. Co.	Irrigation, &c.
El Paso	El Paso Irrigation Co.	Irrigating Canals.
Eylau	H. S. Matthews Lumber Co.	Saw Mill.
Farwell		Grist Yard.
Fort Worth	C. W. Reynolds.	Grist Mill.
Fort Worth	Fort Worth Moss Collar Co.	Collar and Jute Factory.
Fort Worth	Fort Worth Artesian Co.	Artesian Wells.
Fort Worth	Texas Fire Log Mfg. Co.	Fire Log Heaters, &c.
Fort Worth	Fort Worth Elect. Mfg. Co.	Manufacturing.
Fort Worth	Enterprise Clothing Fcty.	Clothing Factory.
Fort Worth	C. F. Sammons.	Excelsior Factory.
Fort Worth	Spanish Moss Mfg. Co.	New Bag Factory.
Fort Worth	L. Geringer.	Flour Factory.
Galveston	Fort Worth Elect. Light	Electric Works.
Galveston	Galveston Light & Fuel Co.	Electric Plant.
Galveston	Texas Star Flour Mills.	Corn Mill.
Galveston	Louis Siegel.	Dynamite Works.
Galveston	Theodore Howard.	Wool-scouring Factory.
Gateville	State Reformatory.	Electric Light Plant.
Gay Hill	Leonard Gee.	Coal Mining.
Grapevine	Dean & Murrell.	Brick Yard.
Groveton	Trinity Lumber Co.	Saw Mill.
Harrisburg	Farmers' Alliance.	Cotton-seed Oil Mill.
Hockley	J. A. Helfrick.	Grist Mill.
Jacksonville	Jacksonville Land, Min-	Mining, &c.
Jacksonville	eral & Imp. Co.	
Jefferson	H. Rives.	Double Woollen Mill.
Jefferson	Phoenix Cot'n S'd Oil Mills.	Improved Mill.
Jefferson	John A. Kruse & Co.	Iron Fur. & Car Wht. Wks.
Jefferson	K. Ballup.	Flour Mill.
Jefferson Station	Hyronas.	Coal Mining.
Kerrville	Frank Fitch.	Quarrying.
Lampasas	J. M. Malone and others.	Creamery.
Laredo	Laredo Elec. Lt. & Pow. Co.	Enlarge Plant.
Laredo	Guadalupe Mining Co.	Smelter.
Laster	East Line Lumber Co.	Lumber Mill.
Leaky	Barnett.	Kaolin Mining.
Lebanon	Kirkpatrick Bros.	Flour Mill.
Liberty		Saw Mill.
Lathrop Falls	A. Arpal.	Brick Yard.
Marshall	Phoenix Electric Co.	Electric Light Works.
Marshall	Marshall Gas Co.	Enlarge Plant.
McKinney	Examiner Publishing Co.	Printing, &c.
Mexia	D. M. Pendergast, prest.	Canning Factory.
Moscow	T. L. Hackney.	Planing Mill.
New Birm	A. Muhl, of Waco.	Foundry.
New Birm	J. M. Coleman.	Rolling Mill.
New Birm	Deveney.	Wagon Factory.
New Birm	H. C. Devlin.	Foundry.
Orange	Lutcher & Moore.	Saw Mill.
Pecos	Jacob Morrow.	Flour and Corn Mill.
Presidio	Poleo Irrigation & Mfg. Co.	Irrigating Canals.
Ranger	John Graves.	Coal Mine.
San Antonio	San Antonio & Aransas	Quarrying.
San Antonio	Pass Railroad Co.	
San Antonio	San Antonio Gas Co.	Enlarge Electric Plant.
San Antonio	San Antonio Elect. Lt. Co.	Double Capital.
San Antonio	G. Hellesman & Co.	Wool-scouring Factory.
San Antonio	San Antonio Electric Light	Enlarge Plant.
San Antonio	& Power Co.	
San Antonio	San Antonio Fuel Gas Co.	Fuel Gas Works.
Sherman	Sherman Iron & Mach. Co.	Machine Works.

LOCATION.	NAME.	BUSINESS.
Sherman	St. Louis, Ark. & Tex. R. R. Machine Shops.	
Spring Springs	Spring & Loughry.	Remodel Flour Mill.
Sulphur Springs	Geo. W. Boomer.	Cotton Compress.
Sulphur Springs	Geo. Leder.	Cotton-seed Oil Mill.
Terrell	Terrell Cream. & Cheese Co.	Creamery.
Terrell	N. Texas Insane Asylum.	Electric Plant.
Texarkana	Texarkana Canning Co.	Canning Factory.
Texarkana	Texarkana Soap Mfg. Co.	Soap Factory.
Texas	Mt. Pleasant Coal & Min. Co.	Mining.
Texas	Tyler Elect. Lt. & Pow. Co.	Double Plant.
Tyler	Tyler Car & Lumber Co.	Car Works.
Waco	Central City Elect. Lt. Co.	Electric Light Plant.
Wichita Falls	Randolph & Killen.	Machine Shop.

VIRGINIA.

Abingdon	City.	Water & Elect. Lt. Wks.
Abingdon	R. E. Hendricks.	Printing.
Alexandria	Newman Wash'g Mach. Co.	Washing Machines.
Alexandria	Gold & Silver Low Grade	Min'g.
Alexandria	Process Co.	
Amherst	R. P. Morris.	Sassafras Oil Mill.
Big Island	Althoff's Polp & Paper Co.	Enlarge Polp Mill.
Blue Ridge Sp.	Phillip F. Brown.	Electric Plant.
Charlottesville		Bucket Factory.
Charlottesville	M. A. Hanson.	Shoe Factory.
Cloverdale	Robertson & Co.	Iron Ore Mining.
Danville	John E. Tuckett.	Tobacco Factory.
Danville	Schofield & Watson.	Tobacco Factory.
Danville	Pemberton & Penn.	Tobacco Factory.
Danville	Traylor & Spence.	Tobacco Factory.
Danville	Adrian & Danville R. R. Co.	Machine Sh. p.
Disputanta	S. C. Gwaltney.	Peanut Cleaning Factory.
Estillville	J. P. Kane.	Saw and Planing Mill.
Farmville	W. G. Dunnington.	Canning Factory.
Franklin	Camp Mfg. Co.	Saw Mill.
Glade Spring	Glade Spring Canning Co.	Canning Factory.
Goodson	Glanigan Co., of Lynchbg.	Water Works.
Green Forest	B. C. Moomaw.	Enlarge Mill.
Leesburg	Price Patent Car Cover Co.	
Liberty	W. A. Sals.	Sassafras Oil Mill.
Lynchburg	Virginia Iron & Nail Works	Regenerative Gas Furn.
Lynchburg	Peter Almsley & Bro.	Carriage Factory.
Lynchburg	Dental Chewing Gum Co.	Factory.
Lynchburg	Lynchburg Furnace Co.	Enlarge Furnace.
Lynchburg	J. T. Yates.	Stave Factory.
Lynchburg	Glanigan Co.	Enlarge Pipe Works.
Lynchburg	Lynchburg Textile Mfg. Co.	Hosiery Factory.
Lynchburg	R. W. Morgan.	Saw and Grist Mill.
Lynchburg	John Whitehead.	Printing, &c.
Middleburg	E. C. Brown & Co.	Hominy Mill.
Midlothian		Coal Mine.
Montgomery co.	Virginia Lime Co.	Lime Works.
Newport News	Chesapeake Dry Dock Co.	Ship Yard.
Newport News	Edgar G. Hilyer.	Enlarge Foundry.
Norfolk	E. Camps & Son.	Shirt Factory.
Norfolk	Virginia Mfg. Co.	Ped Factory.
Norfolk	W. T. Barron & Co.	Enlarge Box Factory.
Norfolk	Old Dominion Guano Co.	Fertilizer Factory.
Norfolk	Norfolk Automatic Gas Co.	Gas Works.
Norfolk	Tunis-Sims Lumber Co.	Lumber Mill.
Petersburg	Blair Bros. & Wright.	Tobacco Factory.
Petersburg	John W. Stearns & Co.	Enlarge Silk Factory.
Petersburg		Grain Elevator.
Portsmouth	Geo. H. Brown.	Double Basket Factory.
Portsmouth	Geo. G. Tyler.	Box Factory.
Pulaski City	Bertha Zinc Co.	Additional Machinery.
Richmond	Watt Plow Co.	Agricult. Imp. Factory.
Richmond	Va. & N. C. Wheel Co.	Electric Plant.
Richmond		Enlarge Works.
Richmond	Allen & Ginter Co.	Enlarge Cigarette Fcty.
Richmond	Outlook Publishing Co.	Printing, &c.
Richmond	Pole Road Locomotive Co.	Pole Road Locomotives.
Richmond	Richm'd Basket & Wood-	Veneering and Buter-dish
Richmond	ware Mfg. Co.	Factory.
Richmond	Amer. Autom. Refrig. Co.	Refrigerating Machinery.
Richmond	Rich. Standard Spike Co.	Spike and Rolling Mill.
Roanoke	Patterson & Wineth.	New Planing Mill.
Roanoke	Roanoke Brick Mfg. Co.	Brick Works.
Roanoke	Construction Co.	
Roanoke	C. Hauser & Son.	Grist Mill.
Roanoke	Diamond Ice Co.	Enlarge Factory.
Salem	Henry Gurst & Co.	Flour Mill.
Salem	C. B. Siebert.	Improve Flour Mill.
Seven Mile Fd.	Diggs & Duncan.	Saw and Shingle Mill.
Shawsville	J. L. Ryan and others.	Zinc Mining.
South Boston	Glanigan Co.	Water Works.
Story Point	J. E. & Edward Rogers.	Saw Mill.
Staunton	Staunton Canning Co.	To Double Factory.
Suffolk	Gay Mfg. Co.	Planing Mill.
Suffolk	Virginia Mfg. Co.	Wood-working Factory.
Suffolk	W. N. McAnge.	Planing Mill.
Suffolk	Suffolk Lumber Co.	Additional Machinery.
Tazewell C. H.	Clinch Val. Log & Lum. Co.	Lumber Mill.
Waverly	H. H. Chestro.	Shuck Factory.

WEST VIRGINIA.

Black Band	Black Band Min. & Mfg. Co.	Coal Mining, &c.
Bluefield	Shenandoah Iron Works.	Machine Shops, &c.
Brazwell C. H.	Goodrich Coal & Coke Co.	Mining, &c.
Charleston	Meharshi Coal Air Mot. Co.	Manufacturing.
Charleston	American Car & Equip. Co.	Manufacturing.
Charlestown	Washington Bros.	Creamery.
Coopers	Elkhorn Coal & Coke Co.	Coke Ovens.
Elkhorn	Shamokin Coal & Coke Co.	Coke Ovens.
Elk Garden	Becher.	Saw Mill.
Elk Garden	West Virginia Central	New Coal Mine.
Fairmont	Pittsburgh Railroad Co.	Coal-crushing Plant &c.
Fairmont	Montana Coal & Coke Co.	Mining, &c.
Fairmont	Upper Monongahela Coal	Coal Mining, &c.
Fairmont	& Coke Co.	
Flipping	J. H. Whelan.	Coke Ovens.
Flipping	Louisville Coal & Coke Co.	Coal Mining, &c.
Handley	Standard Coal & Coke Co.	Mining, &c.
Handley	Chesapeake Mining Co.	Mining, &c.
Hayberry	Norfolk Coal & Coke Co.	Coke Ovens, &c.

THE SOUTH'S TIMBER SUPPLY

Yellow Pine—The Enormous Supply and Consumption

MILLIONS OF ACRES OF TIMBER LAND OWNED BY WESTERN AND FOREIGN CAPITALISTS.

\$50,000,000 Invested in Southern Pine in 8 Years. and \$20,000,000 More Predicted for the Next Few Months.

RAPID INCREASE IN VALUES.

A List of Some of the Largest Owners of Southern Pine Lands.

[For MANUFACTURERS' RECORD.]

The forestry bulletins of the last census of the United States give the following estimates of long and short leaf yellow pine standing June 1st, 1880, viz:

	Long leaf, feet.	Short leaf, feet.
Alabama.....	18,885,000,000	
Florida.....	6,615,000,000	
Arkansas.....		41,315,000,000
Georgia.....	16,778,000,000	
Louisiana.....	26,588,000,000	91,625,000,000
Mississippi.....	17,300,000,000	6,775,000,000
North Carolina.....	5,299,000,000	
South Carolina.....	5,316,000,000	26,091,000,000
Texas.....	20,508,000,000	26,091,000,000
Total.....	117,119,000,000	121,901,400,000

Making a grand total, long and short leaf pine, in the Southern States, of 239,020,400,000 feet. The forestry bulletin is incomplete, inasmuch as it does not include the standing pine in Virginia, West Virginia and Missouri, in the estimate to June 1st, 1880. If we estimate that the forestry figures fall far short of the actual supply, by 10,000,000,000 feet, it will not affect in the slightest the startling assertion, that should the present enormous rate of lumber and timber consumption be kept up for twenty years, we will experience a timber famine. Place the annual consumption of yellow pine at 6,000,000,000 feet; within twenty years, it will leave in standing pine in the South only 120,000,000,000 feet. This is a mere figurative presumption, for it is well-known that the consumption of Southern pine annually exceeds 6,000,000,000 feet. Therefore, ere twenty years expire, we may look around with cold statistics to back us in vain for these vast and rapidly disappearing forests of pine. I am of the few who discredit the correctness of the forestry bulletin's estimates of the yellow pine supply. I incline strongly to double the amount standing in 1880, as set forth in the estimates of the census figures.

I claim that yellow pine is of rapid growth, that it reproduces every nine or ten years trees sufficiently large to be worked up into lumber, hence the actual supply of yellow pine could not be estimated by the census takers, as they failed to take in their estimates in 1880 any pine trees under ten inches diameter, and the trees of ten inches diameter in 1880 are to-day merchantable trees of fourteen to sixteen inches diameter, and will contribute in a large measure to increase the supply of lumber for the uses of our country. I am no advocate of the theory of the "denudists," for at best it is but a theory based upon the hypothesis of an actual supply and a possible consumption annually. There is not due nor proper allowance made for the growth of the young pine. Now on the other hand, I am assured after the most searching and painstaking efforts, that the rate of consumption is steadily increasing and the annual consumption of yellow pine is far in excess of any figures that have as yet been given out either by the statistician or denudist. The vast prairies of the great Northwest and of Texas and Mexico are being rapidly settled by the immigrant. This has for years

been draining the forests of Michigan, Wisconsin and Minnesota, and now that these great pine States have been so depleted and the price of stumpage attained to such extravagant figures, the Southern States will, and they are every day, called upon to contribute their yellow pine to satisfy the demands of these vast prairie States, and with the demands from new railroads building, replenishing the old ones with cross-ties, bridge timber and car timber, the demands from new manufacturing enterprises, what results may we anticipate for yellow pine lumber within the next ten years.

Even now we find yellow pine lumber beating its way into the mining States of Idaho, Montana, Colorado, Nevada, New Mexico, Arizona, etc. Every day some new field is sought and found to market yellow pine. There are Central and South America to be supplied, and it must all be done with yellow pine. I think the knowledge and application of these important facts has been the means of influencing the vast purchases of pine timber lands in the South, by the Northern, Eastern, Western and foreign capitalists within the past few years. The aggregate acreage of Southern pine lands owned by these capitalists is appalling, for with a combination and pooling of interests in the shape of a Trust, what a power! Where would prices for pine lumber halt? It has been claimed that these capitalists and lumbermen own and control over one-half of the yellow pine timber in the South. I do not regard it an extravagant statement. I will mention, as a sample, a few of the pine holders in the South—and how many others who own lands of whom I know nothing:

	Acres.
D. A. Blodgett, Michigan.....	200,000
*A. G. Van Schaick and his syndicate, Illinois.....	200,000
Foster, Blackman & Co., Michigan.....	100,000
Wright & Ketchum, Michigan.....	100,000
Hackley & Hume, Michigan.....	100,000
A. Van Mann & Co., Michigan.....	100,000
R. J. Peters, Michigan.....	25,000
H. Butters, Michigan.....	100,000
W. B. Wells, Michigan.....	100,000
A. B. Watson, Michigan.....	100,000
W. C. Yawkey, Michigan.....	100,000
D. Whitney, Michigan.....	100,000
N. B. Brady and his syndicate, Michigan.....	100,000
Avery Bros., Michigan.....	100,000
J. P. Irwin, Michigan.....	100,000
H. W. Sage, Michigan.....	100,000
Gratnick, Smith & Co., Michigan.....	100,000
Pack, Woods & Co., Michigan.....	100,000
R. T. Wilson, New York.....	100,000
P Phelps, Dodge & Co., New York.....	100,000
Wisconsin syndicates.....	800,000
Minnesota syndicates.....	500,000
W. H. Howcott, New Orleans, agent for Scotch and English companies.....	700,000
Sir Edward Reed, England.....	500,000
Duke of Albany and associates, England.....	300,000

I might go on in this strain for columns and still leave untold one half of the owners and the acreage held by them. There are vast saw mill and lumbering enterprises all over the South worked by Northern and Western men. These mills are cutting at the rate of 40,000 to 150,000 feet lumber per day each, shipping and distributing this enormous lumber product to all points in America, Mexico, Honduras, Central and South America, Europe and Africa. Every day there is a new saw mill located in some part of the Southern pine belt. It is a fact that, in Eastern Texas in the pine region along the railways, there is a saw mill located every two to three miles, and it is not an infrequent sight to see two or more mills at the same railway station. The world, outside of those interested in timber, has but slight knowledge of the vastness of yellow pine lumber production in the South. There has been over \$50,000,000 of Northern, Western and foreign capital invested in Southern timber lands, saw mills, etc., within the last eight years. This, perhaps, may appear exaggerated to some, but I prefer to believe the amount is rather understated than overstated. It will require but limited reflection on the part of the investment seeker to at once assure himself that, with the present rate

[*Probably too small by 300,000 acres. Mr. Van Schaick and his friends probably held 500,000 acres.—Ed. MANUFACTURERS' RECORD.]

of consumption of yellow pine, that within a few years the prices prevailing to day for pine lands will appear as insignificant, and he should bestir himself to secure for his old age the profits and income to be derived from a judicious purchase at the present low prices. Sometime since, that reliable and sterling journal—the *Timberman*, of Chicago—published an editorial on "The Evolution of Pine Stumpage Values," in which it stated as follows:

"Indications all point to the fact that there are just as favorable opportunities in the Southern States for successful pecuniary results in pine land investments as there were in Michigan less than a quarter century ago. There are a considerable number of lumber manufacturers on the Saginaw river to day who remember very well when it was possible to secure sufficient timber land from the government at \$1.25 per acre to satisfy the ambition of the most sanguine believer in the prospective advance in prices, and when it became necessary to pay three or four dollars per acre for the same to those who had invested therein, the price was considered excessive if indeed it was not looked upon as exorbitant. In a very few years thereafter, however, the "stumpage" on the same land was selling at the same price per thousand feet, and plenty of it has since been purchased at \$6 and even \$8 per thousand, while the original investors having succeeded in placing themselves in the list of millionaire pine barons of the country, and some of the land secured originally for \$1.25 per acre has finally changed hands, bringing the enormous price of \$80 per acre.

We are aware of one lot of pine land purchased within three years ago for \$19,000; the purchaser removed 3,000,000 feet of logs therefrom which he sold for nearly \$36,000, and sold the balance of the timber at a handsome advance on the price paid for the entire lot. The next purchaser sold to a third party at a nice profit, while the latter in a few months disposed of it, clearing the magnificent sum of nearly \$40,000. These opportunities have been standing for years, notwithstanding the numerous shrewd pine land dealers who have been constantly "looking for chances." As stated heretofore, there are doubtless numberless opportunities in the Southern States to-day for just such pecuniary results as are enumerated above.

Numerous Michigan lumbermen have purchased Southern timber lands within a few years, who are awaiting the prospective gratifying pecuniary results which must evidently be eventually realized. Some of them have already commenced the slaughter of this Southern pine with Northern appliances and Northern enterprise with the most gratifying results, and what the lumber business has accomplished in building up Michigan and Wisconsin cities, it will doubtless do for the timber sections of the South, after Northern capitalists and Northern enterprise have swooped down on the timber territory and seized the opportunities which are awaiting their advent."

This is a conservative prophecy for the future values of yellow pine timber lands, and I commend it to the readers of the *MANUFACTURERS' RECORD*. There is not an acre of yellow pine timber lands in all this broad Southland which to-day may be bought for the small and insignificant price of \$2 to \$4 per acre, which will not within less than five years return a profit to the purchaser of from 100 to 500 per cent. I have often conjectured why it was that people with money to invest safely for their old age or for the benefit of their children should prefer to purchase stocks or bonds of wild cat gold mines, railroads and such like securities which are based upon inflation; which are at the mercy of panics, Wall street cliques or defaulting cashiers, in preference to these

Southern pine lands. Prices are not inflated; they are as low as it is possible to make them. Panics nor cliques, defaulting cashiers, wars nor rumors of war can in any way cause their value to shrink. There is an awakening just now on the part of the people who desire safe and secure investments, and each day purchases and investments are being made in these magnificent pine lands for the account of the savings bank, the life insurance company, the widow, the orphan, the retired merchant and the man with small savings. It was only last week that several school teachers in Massachusetts and Connecticut sent down their money to be invested in pine lands, having grown weary with "Western farm mortgages." This is the class of people who should seek such investments, for a small investment now will within a few years return to them that profit which may be a competency.

The question has often been asked, where, in which State South would an investment in pine lands give the largest, quickest returns. I simply reply, "if you desire to go into this form of investment with a speculative idea, it is best to keep out." As stated in preceding lines, there is not an acre of pine lands in the South at the prices prevailing to-day which will fail to return a cash profit to the purchaser. When we take into consideration that the States of Ohio, Indiana, Illinois, Pennsylvania require an enormous supply of lumber annually, and that this lumber must from necessity come from the yellow pine belt, and that Mexico, Texas and the great Northwest must be supplied with yellow pine lumber from the South, and that the Eastern States must be supplied with yellow pine lumber, and all must come from the South, it must be obvious that the location by States or section are of little importance, for all, every acre, every tree of Southern pine will be wanted, and wanted at prices many times higher than those of to day.

It was only a few years since when architects and builders in Boston, Philadelphia, New York, etc., sneered with contempt at the mention of "North Carolina sap pine flooring." To day visit the lumber yards of these great cities; inspect the stocks of lumber; what do you discover? That "sap pine flooring is staple," that no yardman's stock is complete without it. Go to Chicago and Minneapolis, Kansas City or Detroit; watch the immense and magnificent buildings in course of construction. Go to Duluth; inspect those vast grain elevators. What do you discover? That the large and long timbers used in the construction of these grand buildings is yellow pine, and mainly from Mississippi, Alabama and Louisiana. This may appear like "carrying coal to New Castle;" that yellow pine lumber should be shipped from the mills in the Southern pine belt right into a city in the very heart of the white pine area, and I predict within three years that yellow pine lumber will be piled in and sold from the yards of Tacoma and Seattle, Washington Territory. This is no Utopian, dreamy prophecy; it is a fact, and one which will be verified. The prices of white pine stumpage to-day in Michigan, Wisconsin and Minnesota, are from \$3.50 to \$6.50 per M feet, standing in the forest. The price for yellow pine stumpage in the South to-day is 40 cents per M feet. Can these great differences in prices for articles of equal merit be maintained simply on geographical grounds? I answer emphatically "No!" and I base my answer on the grounds of common sense. Distance in these days of progress can be cheaply covered, and with a freight rate of 26 to 30 cents per 100 pounds on lumber to Chicago and Duluth from the South, with a 40 cents per 1,000 feet stumpage, it is reason and common sense to realize that yellow pine lumber will invade

the very native threshold of white pine, and the great difference in prices, with merit on an equality, the lumber consumer in Minnesota and Alaska will call for yellow pine. The march of this age is onward, not backward. The people of to-day do not stop and ask from whence does this lumber come. What section or from what people? They ask for its merit and its price, and yellow pine lumber is like a "woman, she needs no eulogy, she speaks for herself."

I have for some time since been engaged in trying to work out the problem of how many millions of acres of Southern pine timber lands are held by Southern people, and my researches have led me to the conviction that these vast pine forests are mainly held by the powerful grip of Northern capital; and I am convinced that of all the diversified and vast wealth of the South's resources, there is none which affords the magnificent opportunities for a safe or a speculative investment as yellow pine timber lands. It is a momentous question, this yellow pine timber supply—a question filled with problems, which will be worked out to the amazement of the world of capital, and to the timid and weak kneed investor, and to the brave and judicious investor. Just as the results that followed in Michigan, Wisconsin and Minnesota—results which made barons and millionaires of the men who had bought pine lands for \$1.25, to have them quietly and almost imperceptibly advance to \$80 per acre. Let me sound a timely warning—there are fortunes ahead in pine lands. The reproduction of the pine lands of the South, with their second growth of timber, cannot offset the sure, steady, solid and daily increasing consumption. Statisticians may figure, the pessimist may croak, and assert that the timber supply is inexhaustible. These figures and croakings are mere words. Cost but the effort of thought and the power of speech. Still the demand is increasing in tremendous force. The axe of the woodsman is clearing away every day broad acres of timber. The saw is buzzing away with great velocity. Where once stood the grand and moaning old forests the smoke curls from the chimney tops of the homestead.

Genius every day creates a new demand for wood—the young pine trees may grow, but the demand goes on. Millions of people are born daily; they will require fuel, shelter, implements. Millions may die; they require the wooden boxes to bury them. The telegraph and the telephone are stretching out thousands of miles daily. They will encircle the globe. These require timber for the poles. New countries are being developed, towns and cities laid out and vast manufacturing enterprises started. These all require lumber and timber. The slow but sure process of decay goes on with the railway cars, bridges and cross ties. These must be renewed; it requires timber, and may I add, the world moves along, does not stop to economize in the consumption or destruction of its timber supply? Will there not be an awakening some day? Yes! Who is to supply with lumber these enumerated and the unenumerated demands? It is a simple answer, the South. Is it not, therefore, important and urgent, and a step towards wisdom to secure the pine, to hold it, to guard it carefully, in order to meet the inevitable and assured advance in prices to follow. These are serious matters of thought to the people South. Your pine lands are fast passing into the possession of capital. Trusts are forming. I urge you to act wisely.

It is estimated that there are over 2,400 saw mills in the South; perhaps it may be an excessive estimate; I do not vouch for it. Suffice, if there are not, within a few years there will be 2,400 mills. This will give a vast output of lumber; it will leave

enormous sums of money in the South; they will develop into wealth the uninhabited forests. Wisconsin and Michigan were made great and populous states by the saw mill, and just so will the South be benefited. There are people from your own State—Maryland—who have bought largely of Southern pine. I refer to E. E. Jackson & Co., who own over 100,000 acres in Southern Alabama. With the duty on Canadian logs advanced to \$3 per M feet, and since the U. S. Senate has withdrawn from cash sale and reserved forever for homestead entry only all of the Government lands in the South, I anticipate a great rush for Southern pine lands. Even now there are numberless buyers out, scattered throughout the South, picking up pine lands, and there is a large contingent due here after the holidays. Syndicates are forming all over America and in Europe to grab up all the Southern pine lands on the market, and I am confident before the close of spring over \$20,000,000 will be invested in Southern timber lands and lumbering enterprises by Northern and foreign capitalists. A wise man will take heed. W. H. HOWCOTT.

Increasing Northern Demand for Southern Pig Iron—Heavy Sales for 1888.

NEW YORK, Dec. 26, 1888.

Editor Manufacturers' Record:

The demand for Southern brands of iron continues to increase, and the outlook for 1889 is extremely favorable. For general foundry work they are firmly established, and in very many cases have the preference over all Pennsylvania brands. The Melrose American Scotch has for several months been put in competition with many different brands of foreign Scotch, and in no instance has it failed to please, and by many is pronounced far superior.

It is predicted that the importation of foreign Scotch will be less in 1889 than in any previous year. Since the first introduction of Southern the demand has steadily increased until the past year, when it estimated that nearly 250,000 tons were sold in the Eastern and New England States, and it is believed this quantity will be exceeded by at least 100,000 tons next year. These irons work well in a mixture with almost any good brand, and can be used alone, some of the most particular foundrymen using the No. 3 in their finest machinery.

The only element of weakness in prices is that the Thomas Iron Co., spurred by the heavy inroads that have been made in a trade which they have been accustomed "time out of mind" to consider peculiarly their own, may decide that "desperate diseases require heroic remedies." Their heroism consists usually of an early retreat, as instanced by their \$3 cut last spring, and as this disease is now even more desperate than a year ago, it may seem necessary to make another vigorous use of the knife, rumors of which are already in the air.

Any reduction in the price will not increase the business, and the freight facilities being continually improved, it will be seen that the South has come to stay, and will be able to hold their trade against any competition. Consumers are satisfied with present prices, and hope to have no reduction, as it demoralizes their business, they being compelled to make correspondingly lower prices on their finished product. WARREN, WOOD & CO.

A VERY attractive pamphlet has been published, setting forth the advantages of "New Berne, N. C., as a Winter Resort for Health and Pleasure." It is so neatly and artistically printed and so brief and to the point that it ought to command much attention.

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KENTUCKY'S TIMBER WEALTH.

Vast Forests of Hardwood.

Great Increase in the Lumber Industries All Through the State.

[Special correspondence MANUFACTURERS' RECORD.]

LOUISVILLE, Ky., Dec. 27, 1888.

The growth of the lumber business and of the industries consuming wood has been very great in Kentucky during the past three years. The lumber business for 1888 may not show to as great an advantage as it did in 1887, owing to the fact that excessive drouth in the mountain section prevented the logs from being carried out of a great many streams and thus reduced the supply to the mills. In the Cumberland river, where there is an immense logging business, there was no tide for more than six months. The absence of any central organization to which reports of the business are authoritatively made, prevents the furnishing of any actual statistics except for the city of Louisville. Here the lumber trade which, in 1880 amounted to 10,600,000 feet, has increased until for the fiscal year ending June 21st, 1888, not less than 125,000,000 feet, valued at about \$3,000,000 were sold in this city. This statement is partly founded upon estimates, but the men engaged in the business say that the estimate is rather under than over the actual amount. The authority is from reports and estimates to the Board of Trade. During the past year there has been a very large increase in the number of saw mills and in the number of brokers handling the product of these mills, and in many of the flourishing towns a number of new industries have sprung up to utilize the hard woods or the timbers suitable for special manufactures. Quite a number of these new enterprises are removals from the Northern States where the timber supply has commenced to give out, and the movement of this kind is constantly increasing in importance and volume. The State of Kentucky offers very remarkable inducements in this direction. Not only do the forests of the State offer an immense supply of lumber, but they are full of every variety of ornamental hard woods and especially of all the kinds suitable for the manufacture of fine furniture and the tough and elastic fibres needed in carriage making. In the latter respect there has been an extraordinary increase in industries during the past two or three years, and it may safely be said that Kentucky is now manufacturing more vehicles than any other Southern State, and in this respect it is probably not exceeded by any of the Western States.

A glance at the forest territory of Kentucky will show what an immense interest it is destined to foster. With a total area of about 42,000 square miles there are nearly 30,000 square miles of forest, and in the eastern part of the State alone there are about 10,000 square miles of virgin timber, most of it of the old growth. The richness of the territory is very remarkable. An expert who examined the timbers on a single tract of 50,000 acres in the Cumberland valley reported estimates as follows:

Black walnut, feet.....	33,330,000
Yellow poplar, ".....	80,000,000
Chestnut, ".....	36,000,000
Ash, ".....	84,000,000
Hickory, ".....	18,000,000
	191,330,000
White oak staves.....	105,000,000
Tanbark, cords.....	25,000

The State geologist says it is safe to estimate that there are 560,000 acres of such timber tributary to the streams centering at Pineville alone, and it is safe to add that with a few exceptional tracts nearly all of the virgin forest of Eastern Kentucky would show nearly the same results. This immense area has only been cut over in tracts tributary to the streams, and where

the forest has been removed it quickly renews itself, so that practically there has been no decrease of the original supply. Prof. N. S. Shaler, the well-known geologist, considering this territory, makes the following statement: "These forests show a singular activity of growth and quickly reproduce themselves. Some of the old iron furnaces in this region have been cutting charcoal timber on the same ground for over fifty years. It is found that the woods renew themselves with great rapidity, and in seventeen or eighteen years are again ready for the axe. The greater part of the Ohio and Mississippi valleys are naturally destitute of good timber, and it is to this region that they must look in the future for their supplies. These forests should play the same part in the development of the industries of the Ohio valley that the Black Forest does to the Lower Rhine. In a few years it will be found that, in timber alone, they will pay better returns than in any other form of cultivation, and that the soil will withstand the exhaustion incident to this crop better than any other. In this way they will furnish exports more valuable for a railway than they can under tillage."

Prof. Shaler discusses the climacteric conditions which unite to produce a better and stronger timber than in either the Northern or extreme Southern States. Those that grow in the North are inelastic and lacking in toughness, while those of the extreme South are brittle. But here, in the middle climate, the hard and soft woods grow to absolute perfection, and experiments have shown that the second growths are sometimes better than the old growth. What is true of Eastern Kentucky is also true of Western Kentucky, though there is not, perhaps, so large a forest area in the Western part of the State. Taking the area of the whole State at 20,000 square miles, it would give 12,800,000 acres of timber land, which, at only two-thirds of the estimate made upon the Cumberland valley tract before described, would furnish about 35,000,000,000 feet of lumber exclusive of the tanbark, staves and other minor products.

The growth of the lumber and hardwood interests in the State since 1880 is told in the history of the railroads. Up to that time the only transportation for lumber was by water, and that was very uncertain and unreliable. The opening of the railroad lines into eastern and southern Kentucky has been accompanied by large developments in the lumber business. In 1880 Williamsburg, the county seat of Whitley county, was a small hamlet with no industries. The Louisville & Knoxville railroad giving an outlet for lumber has within seven years concentrated at that point a population of three or four thousand and has built up an enormous lumber business. One company operating at that point had 40,000,000 feet of logs awaiting tides in the Cumberland river a few months ago. In Madison county, the lumber town of Ford, which, two years ago was a corn field, now contains about 800 inhabitants and five or six very large mills. The line of the Chesapeake & Ohio Railroad in Eastern Kentucky has built up very large lumber industries at Mount Olivet and Grayson, in Carter county, at Morehead and Farmer's Station in Rowan, and at other suitable points on the line. A great deal of the lumber goes East; a quantity to England, and several firms in the State are exporting to Australia. The purchase of the Green and Barren river improvements by the United States and the opening of the streams to free navigation will furnish facilities for cheap lumber enterprise unequalled in the South.

At the present time the construction of railways in the State points to opportunities within the next two years for extraordinary development. The Kentucky Union

LOUISVILLE.

The Natural Gas Region—Great Increase in Manufactures in 1888.

BRANCH OFFICE MANUFACTURERS' RECORD.

LOUISVILLE, KY., December 31, 1888.

Railway, which is being built from Lexington to Beattyville, in Breathitt county, is projected across the Eastern Kentucky forest at its widest part, and traverses a section marvelously rich in timbers. The company are already preparing to build a lumber and iron manufacturing town at Clay city, on Red river, the site furnishing water power sufficient to supply a countless number of mills. The territory about it is heavily timbered, and as soon as the road is ready to bring out the products next summer it will be a virgin field for capital. Appreciating the value of the timber growths and the facility with which they are renewed, the railway company have purchased half a million acres, with the intention of protecting and cultivating the timber to supply the industries dependent, and will establish their own industries at Clay City and have the control of their own forests. The Beattyville extension of the Louisville Southern Railroad, also under construction, will penetrate the same region from another direction and will probably be completed during the autumn of 1889. The Louisville, St. Louis & Texas Railroad traverses great forests on the Ohio river, and is connected with the Ohio Valley Railroad at Henderson, which line penetrates the center of the great forest territory of Western Kentucky. These two lines are but just opened, and in every county there are opportunities for investment in a profitable way. Another railroad line penetrating the western forest extends from Paducah to the Tennessee line, and steps are now being taken to build the road.

The Kentucky timbers are of all varieties, comprising white and yellow pine, white oak, yellow poplar, hickories, black walnut, chestnut, linden, black oak, scarlet oak, chestnut oak, maples, beeches, birch, cherry, ash, locusts, elm, buckeyes, magnolia, gum, sycamore, cedar and hemlock. In the eastern part of the State, remote from transportation facilities, Prof. Shaler found a body of fine old black walnut trees that he had heard of in the United States, and a ride through the Cumberland valley shows many of these old trees which would bring \$200 net per log. It will be many years before some of these timbers are available for transportation line, but at the rate at which the forest territory is now being penetrated there are opportunities for the establishment of lumber and wood industries to employ an immense amount of capital. It will not be possible to obtain anything like accurate statistics of the increase of the lumber business before the end of the next fiscal year in June, 1889; but it is not too much to say that in four years the value of the lumber interest in the State has quintupled.

YOUNG E. ALLISON.

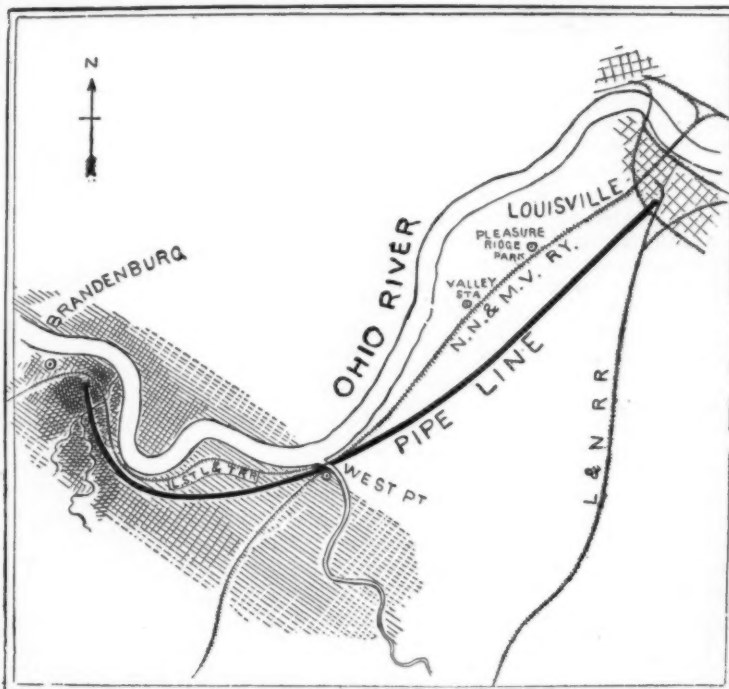
COMPARE the South of to-day with the South of 10 years ago. Populous towns where then were dreary cotton fields; the bustle and life of industry, the evidences of wealth, where were decay and desolation; the smoke of factories and whirr of machinery, where was perpetual silence; railroads and thriving villages, where were trackless forests and undeveloped wastes. Observe these changes, and remember that this is only the beginning!

"COTTON FACTS" for 1888, by Mr. A. B. Shepperson, 13 William street, New York, is as full of valuable statistical information as the previous issues of this admirable publication. It contains official statistics of crops, receipts, exports, consumption, acreage, &c., of cotton for a series of years.

The building of Louisville's natural gas pipe line, which was begun last week, has already aroused a great deal of activity in the section to be developed. The gas territory contains glass sand, limestone, cement rock, and the finest quality of brick and potters' clay, besides being covered with good timber and abounding in salt water. Steps are already being taken by companies in the vicinity to locate industries in the gas field, where they can sink their own gas wells and control their own fuel. As the territory is traversed by railway and river lines of transportation, the manufactories started there will have every facility for the transaction of business and the carriage of products. The map which accompanies this letter will indicate the situation of the gas field with regard to Louisville. It is southwest of the city at a distance of about thirty miles, the nearest edge of the field being about twenty-three miles from the city. The darkened area on the map shows the limits of the gas field as determined thus far by test, but the full extent has not yet been demonstrated. It extends a distance of about fifteen miles from one end to

gable, and therefore can always be relied upon to furnish competition in freight rates between Louisville and the gas field. The continuation of the present weather assures the completion of the pipe line by the first of March, but the company still name April 15th for the date of introducing it into this city. In the meantime the Louisville Gas Company is building a holder capable of furnishing from three to five million cubic feet of artificial fuel gas daily. The company will probably be ready to supply their customers during the spring or summer, and there seems little doubt that all of the gas, natural and artificial, that can be brought to the city will be utilized.

The Commercial Club has completed its statistics of the increase of business in Louisville for the year 1888, and the showing is greater than for any year in the history of the city. As stated in the MANUFACTURERS' RECORD of last week, the increase has been largest in woolen mills, cement, wagons, tobacco, agricultural implements, furniture, iron and fertilizers. For twelve months ending January 1st,



LOUISVILLE'S NATURAL GAS TERRITORY—Distance from city 23 30 miles. (Shaded portion indicates the gas-bearing territory.)

the other, and is four or five miles broad. Two lines of railroad will put the territory within one hour's ride of Louisville. It is highly probable that within the next three or four months several manufacturing towns will be located in the district, founded upon industries which will use the raw material to be obtained on the ground. The brick-making clay is of an unusually fine quality, and is especially adapted to the manufacture of what is known as terra cotta lumber, the right to manufacture which is owned by Louisville parties. The use of natural gas to burn the terra cotta will greatly reduce the cost of making, besides improving the quality of the product, and if manufactories of that kind are established, the whole South could be supplied from this point. The use of the gas in the manufacture of cement will also be valuable, and since Louisville has already become the most important point for the production of this class of goods in the South or West, the cement would find a valuable market already awaiting it. One of the advantages of the location is that the Ohio river between Louisville and Brandenburg is always navigable,

1889, there have been eighty new manufacturing establishments started in the city, classified as follows:

Brick making.....	3	Brushes.....	1
Candy factories.....	4	Cement mill.....	1
Cigar factories.....	5	Copperage.....	1
Cutlery.....	2	Distilleries.....	4
Drain tile.....	1	Flavoring extracts.....	2
Excelsior works.....	1	Flouring mills.....	2
Harness factories.....	4	Heating stoves.....	1
Horse collars.....	1	Inks.....	1
Jeans clothing.....	2	Iron works.....	5
Lumber mills.....	7	Leaf tobacco.....	3
Tobacco factories.....	2	Mustard & spice mill.....	1
Machinery.....	4	Oil.....	1
Preserves.....	2	Soap factory.....	1
Signal clocks.....	1	Sash, doors, etc.....	2
Sur.ical instruments.....	1	Tinware.....	2
Tannery.....	1	Steam bakery.....	1
Vinegar factories.....	3	Patent medicines.....	1
Jewelry manuf.ories.....	2	Cotton mill.....	1

The whole number of failures in all classes of business during the year was eighty-two, involving liabilities to the amount of \$1,063,495, which is less than half the amount of liabilities involved in failures during 1887, and the failures are one less in number than for 1887. The number of manufacturing concerns that failed in 1888 was ten, and these were mostly of a very small class, and several of them have been reorganized on a firmer basis and have already resumed business upon a larger

scale than before. There is, therefore, a net gain of about seventy new manufacturing enterprises for 1888 against sixty-five for 1887. This will be found to be the largest showing by far of any Southern city and eclipses any of the Western cities of equal size. A large number of new enterprises are now being organized and will commence operations early in January, so that the actual gain is even larger than that shown in the above statement. These will go into the table for 1889, which will probably eclipse anything in the history of Southern development.

The close of the year will show another very large increase in the volume of business during 1888, and in this respect Louisville will probably exceed any other city of equal or greater size in the country. Notwithstanding it has been a dull year, the volume of business shows an increase of between \$30,000,000 and \$40,000,000 over 1887, and the total clearings will be about \$30,000,000 against \$28,000,000 in 1887. The record of Cincinnati up to date shows a falling off of about \$44,000,000 from last year, and all of that trade which is from the South has naturally come to Louisville. The action taken by the people of Louisville during the yellow fever epidemic had the effect of attracting a good deal of kindly feeling to the city, and there is little doubt that a great many Southern merchants are dealing here who never did so before. The present year's record also shows that Louisville has trebled the volume of her business in ten years.

The bonds of the Commercial Club's new building have been placed with the New York Life Insurance Co. at par, bearing six per cent. interest. The amount of bonds issued will be \$228,000, and the amount of stock subscribed is \$172,000. The Commercial Club will have roomy and elegant quarters on the ninth floor, and the work of tearing down and preparing the site for the new building will commence on January 2d, the desire being to finish the building within one year. This is the first foreign capital ever brought to this city for investment in this direction, and it is but the precursor of a great deal more to follow. In the meantime the Commercial Club are constantly increasing their membership, and the Commercial League of the State will be fully organized during the month of January.

Work has already commenced on the construction of the Cloverport & Fordville Railroad, a feeder of the Louisville, St. Louis & Texas. It will be built and owned by the latter company, and will traverse a rich mineral region towards the Green river country. The intention is to have the new line opened for traffic next summer. It will be about 25 miles in length.

It is announced that there will be something like a consolidation of the two street car companies this week. They operate 130 miles of road in the city, and the consolidation will largely increase the transfer system and make travel cheaper and more convenient. The electric line will be opened in February, and will probably be greatly extended during the summer.

The Gaynor Electric Co. have secured the contract to furnish the outfit for an electric railroad up Lookout Mountain. The company organized a year ago and have now one of the largest manufacturing plants in the country. They employ more than 100 mechanics and have doubled their capacity since establishment.

IF you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving character of machinery desired.

BIRMINGHAM.

Basic Steel Developments—New Furnace at Gate City.

[Special correspondence MANUFACTURERS' RECORD.]
BIRMINGHAM, Jan. 1, 1889.

Another new year! Well, let us hope it will be as good to us in some respects as the one just dead has been, and that it may improve upon its predecessor in several respects. For instance, we should be very well content to see the practical progress of our manufacturing interests in city and district up to the excellent mark of 1888, and we might claim absolution for wishing that we be spared the close money market of part of the past year, election upheavals, threats of Mills bills, destruction to American capital and labor, jail riots, free raw material, and the hypocritical attempts of the whiskey ring free traders to convince the people that the firm of Mills, Carlisle, Waterson & Cleveland is their only sure enough friend and protectors. "Codlin's the man, not Short," you know, is the Little (k) Nell with which the old ring is ringing itself out of power and patronage.

It does not appear that anybody connected with the material development or interests of the South is sorry that '89 is to witness an entirely new regime at Washington. If Cleveland had been re-elected, there is pretty general agreement that things would not have been as pleasant or as prosperous for us here as they now promise to be. Capitalists of the East and of Europe, who are already making active enquiries in the directions of coal, iron and timber, would hardly have commenced to nibble at our large and well-selected assortment of tempting bait if the result of the Presidential election had been different. Once in a while one hears a good citizen express a patriotic regret that postoffices, marshalships and Federal judicial vacancies are to go to Republicans for a good while to come, but, on the whole, everybody hereabouts is well pleased in view of the substantial benefits we are likely to receive in connection with Republican guarantees of a continuation of the good old principle of high protection to American enterprise, capital and labor.

Long ago the MANUFACTURERS' RECORD predicted a strong movement in Southern timber lands whenever the ghost of free Canadian timber and lumber should be finally laid. Since the defeat of the conspiracy to let in that foreign raw material, the beginnings of the movement have become thus early apparent. Dealers here are receiving numerous questions in regard to desirable tracts of pine land, while like enquiries are coming in concerning the splendid hardwood areas of Kentucky and Tennessee. People connected with this important Southern interest, but little developed as yet, that is in comparison with the possibilities, have long and reasonably suspected the existence of large-sized wooden skewers in the late hopes of the Democratic party in the Northwest. The Mills bill free Canadian timber and lumber outrage upon the forest resources of the South was rather apparently attempted in the hope of aid and comfort from the timber barons of Michigan, Wisconsin and Minnesota, most of whom were expected to do anything else than encourage Protection when Protection meant the certainty of the gradual, possibly rapid transfer of the lumber and wood-working industries to the New South. Where Mills, Cleveland and the rest were in error was in forgetting that for each wealthy operator in the Northwest anxious for free foreign raw material to maintain existing plants, towns, &c., there were and are thousands of intelligent, generally well paid and skilled work people vastly more willing to follow Kalamazoo, Grand Rapids and Duluth to

Kentucky, Tennessee, Alabama, Florida and Louisiana than to have their occupation taken away from them by cheap French Canadian labor. The Democratic leaders perhaps understand the position of the laboring classes in the Northwest better since the election; but their desire to capture those hyperborean regions at the expense of the South was well illustrated in the reply of an Alabama Congressman, representing an almost exclusively timber constituency, to a letter addressed him by a prominent citizen of Birmingham, and an old friend and neighbor to boot. The latter asked how the M. C. could conscientiously favor that portion of the Mills bill which provided practical destruction for the leading interest of his native country? His answer was that it was pretty hard, but that it was considered necessary for the good of the party! Our politicians do not seem to understand that the benefits or uses of a party which does not represent and protect the practical interests of its members are becoming so obscure to the average business voter that its hold grows conspicuously weak.

Possibly the recent pilgrimage of the Birmingham manufacturers, mostly Democrats, to Indianapolis, and some other things likely to transpire before long, may inject a modicum of political sense in political quarters where it would be of service. Should it happen, for example, that President Harrison meets the moderate wishes of the forces of progress and development in this section, the old Bourbon leaders will find their following sadly reduced before the end of the incoming administration.

Whether the fact is known or not, much energy, enterprise and money has been devoted to the solution of the steel question in Birmingham during the year just closed. The MANUFACTURERS' RECORD has chronicled the conception, growth and final success of the Henderson steel projects, but that worthy enterprise has not been the only effort to reach a result upon which much depends in the way of an important expansion of our manufacturing possibilities. When it is remembered that no end of fine basic steel is being manufactured in Europe from basic pig metals made from red fossiliferous ores identical with those of this district, there does not seem to be any reason why we should fail to make good basic pig iron too. Experience, study and experiment have produced surprising results in the perfection of our furnace practices, and quantities and qualities of product are daily turned out of our furnaces as a matter of course which a few years ago would have been deemed phenomenal. One success after another has brought our experts nearer and nearer to the point of producing basic pig. One of the most practical and successful of our furnace managers, Mr. Fred Sloas, has determined to build a hundred-ton plant, in connection with the Birmingham Mining & Manufacturing Co., of which he is a director, to show that this thing can be done beyond any peradventure. The furnace which will be erected at Gate City will be unique in some other respects. It will be built upon the side of the highest mountain in the county, and which ought to be called the Sloasberg. It is a mountain of iron of very superior quality, of limestone and marble. Over two miles of broad gauge, private tracks wind around the property, connecting with and reaching at some points a grade of 60 to 75 feet above the railways below, which are the Louisville & Nashville, Alabama Great Southern, Georgia Pacific, Georgia Central, and Kansas City, Memphis & Birmingham. The only material that will have to come from outside the property is coal, and that will only be hauled a few miles—four or five. Stockhouses will all be on a level with the railway above the furnace. A splendid mass of red ore will be leveled

away to make a yard. Ore and limestone will practically feed into the stack from their beds.

The output of the new furnace will be about used up at the site, that is, at Gate City. Although youngest of the manufacturing suburbs of Birmingham, this place, offspring of Sloas energy and the Birmingham Mining & Manufacturing Co., already has a working and general population of something like 3,000 people. The Alabama Rolling Mills and the Pioneer Glass Works are here, and in regard to the latter something ought to be said, although there is not much room for it in this letter. The great limestone quarries on the "Sloasberg" demand preference of attention. There is a good deal of limestone, as one might say; the ledge must be 300 feet thick, and the whole mountain, what is not iron ore, is the purest sort of limestone yet developed in the district. About 90 per cent. of all that material used in our furnaces comes from these quarries, which have been recently opened at an expense of \$200,000, and it is impossible as yet to keep up with the demand, although the monster rock crusher has an easy capacity of 3,000 tons every ten hours. The work of preliminary development is not yet complete; when it is, the management say they will be able to supply all the furnaces in Alabama. In addition to the regular daily blasts, there are stated days in each month on which holes and charges enough are put into the sides of these magnificent rock faces to knock off 20,000 tons at a single shot. Gate City, only fifteen minutes from the center of Birmingham, offers excellent facilities for manufacturing enterprises of all kinds. It is understood that the proprietary is disposed to treat liberally with persons or corporations looking for desirable locations in the New South.

Before closing it may be of interest to our friends engaged in the glass line to know that at Gate City, and on one other property at least, within a mile of Birmingham, there are inexhaustible deposits of glass sand, as white as snow and analyzing 99.25 pure silica and 99.90 glass making properties. So far these wonderful sands have been utilized only in the Pioneer plant at Gate City, and up to the present time only for the production of the commoner staples of the glassblower's art. But the interest has "caught on," the market is widening, and it surely will be but a short time before this locality will be famous for its glass industries. People in the East who are familiar with the subject might do worse than secure detailed information on the matter. It is needless, perhaps, to remark that MANUFACTURERS' RECORD readers are always at liberty to command the personal attention of your and their faithful ambassador at this industrial court to any enquiries or things of that sort they may choose to send along.

GOLDAMITH BERNARD WEST.

THE new year opens with a contract for another coke furnace at Roanoke, Va., to be built for the Crozer Iron & Steel Co. of that place, a furnace for basic pig and a rolling mill at Gate City, Ala., and the report of a possible 30,000-spindle cotton mill and bleachery at Atlanta, Ga. As big enterprises these will do pretty well as a start.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

Minerals of North Louisiana.

[Special correspondence MANUFACTURERS' RECORD.]

NEW ORLEANS, LA., Dec. 26, 1888.

I was so unfortunate as not to have received the copy of the MANUFACTURERS' RECORD containing certain "finds" of Mr. R. S. Cameron, of Colfax, Grant parish, La. He speaks therein of assays of various gold and silver bearing rock, as appears in extracts from the letter in a late issue of the New Orleans Picayune.

For a long time I was very skeptical as to the valuable minerals of Louisiana, and I may say that I have been driven out of rather obstinate (as they now seem to me, because of their being somewhat gratuitously taken) prepossessions against the precious mineral wealth of this State. But there is so much humbug and fraud and precipitate conclusion, so much racket in the direction, that I have thought the voices of conservatism and the drawbacks of scrupulosity infinitely preferable to even innocent deceptions perpetrated by sanguine credulity.

Nevertheless, I have been quietly investigating and have come across minerals in Louisiana that, in my opinion, promise to startle science and possibly awaken capital to promising ventures.

I will premise some facts by stating that I did not start out with any other expectation than finding out something in behalf of science. Economic geology had no consideration in my investigations. I saw a little piece of rock; it startled me, so great seemed its significance. Assuming it to be what I thought it might be, I foresaw the possibilities in Louisiana in point of minerals. I saw that it might betoken coal and vast beds of iron, marble, etc. I sent this piece of rock to my esteemed friend, Thomas Meehan, an eminent scientist in Philadelphia, Pa., and asked him to get the opinion of a geologist there of world-wide reputation—Prof. Leakey. This gentleman's opinion was not secured, but that of another most eminent geologist was. He says: "It is auriferous quartz." * * * And it was only a question of whether there was enough to make it pay to crush and wash out at any time. He says "the quartz rock about Philadelphia has a good deal—not enough to make it pay; yours has more; but the only question is, not is it wonderful that it exists in North Louisiana, but is there enough to make it pay to smash? This," he says, "only actual experiment can tell."

So much for the scientific side.

As to quantity of rock, I am assured it is in immense force. And there is another quality found in a much more beautiful quartz, I am informed.

Since I saw the above stone and received the above information, I have had given me some rock, a very fine grained limestone, thickly lined and veined with carbonate of silver, some gold and iron pyrites. This rock, my informant tells me, is in immense force, and some of it has assayed 75 ounces of silver to the ton. This informant is a gentleman of very high standing and of unimpeachable character.

I expect, ere long, to make quite a tour among the rocks of North Louisiana. Part of that country is wild and untraversed, and almost strange to human footstep. I had started and was well on my way weeks ago, but untoward circumstances frustrated me.

I wish I dare predict all I hope from Louisiana minerals. No exploitation has ever even skinned the superficial area of the State. Science and capital must now go to work. The clues and earnest are sufficient incentives. But fine marble, coal (semi anthracite, I predict), gold, silver and lead will most likely be found in quantities to surprise scientists and richly reward capital.

M. B. HILLIARD.

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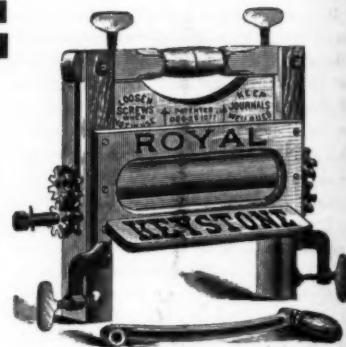


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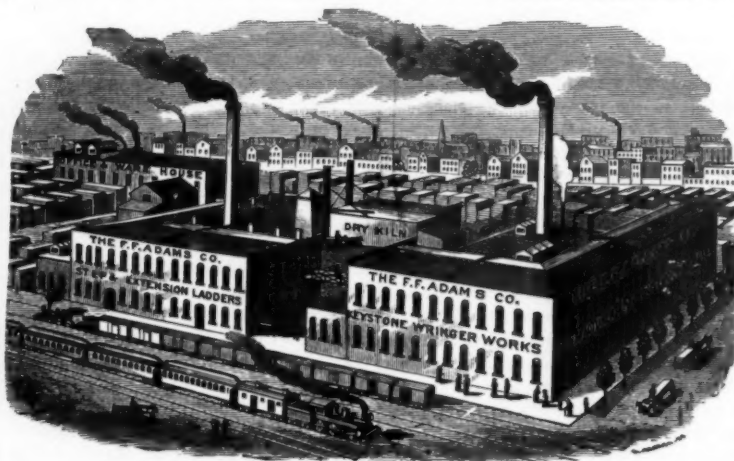
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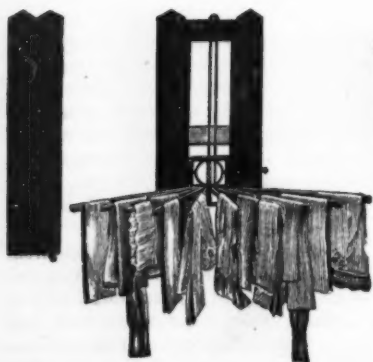


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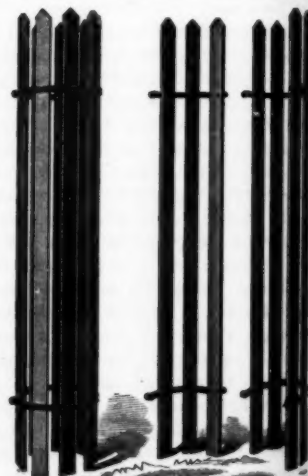


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TO THE TRADE.



WE have added a number of *New and Useful Household Articles and Specialties* to our already Large Line of Goods. They are all very Salable. We want a live dealer in every city and town of the South to handle our full line of specialties. Write now and secure terms and exclusive agency in your town or city. We will make it interesting for you. Address



THE F. F. ADAMS COMPANY,
ERIE, PA., U. S. A.

Dallas, Tex.

THE LARGEST CITY IN THE LARGEST STATE IN
THE GREATEST REPUBLIC ON EARTH,

Invites everyone to visit her and investigate the evidences upon which she claims
that her population will be 100,000 in five years.

POPULATION IN 1880, 10,350

POPULATION IN 1888, 49,700

Over 1,000,000 prosperous people live within 100 miles of this business centre, and
the country would easily support 10 times as many more.

We Need and will give Practical Encouragement to Manufactories of every kind.

We need a Grain Elevator to store 10,-
000,000 bushels of surplus grain.

We need Agricultural Implement Works.

We need Wagon and Carriage Factories.

We need Iron Foundries and Machine
Shops.

We need Furniture Factories.

We want Cotton and Woolen Mills.


We want a Paper Mill.


*We have an Abundance of Raw Material and
Want it Converted into Finished Product.*

CROPS ARE GOOD. LIVING CHEAP, LANDS LOW AND
CLIMATE AND HEALTH EQUAL TO ANY IN THE
WORLD. COME AND SEE FOR YOURSELVES.

Address, Secretary Immigration Association, - - - DALLAS, TEXAS.

CATARRH AND CONSUMPTION.

NOT ONE CASE OF EITHER OF THESE  DREADFUL MALADIES EXISTS OR EVER ORIGINATED AT ROME, GA.

The Annual Death-Rate is Lower at Rome, Georgia,  than at any City of **10,000** People or more in America, being only 8.40 per thousand.

ROME, GEORGIA,

• • Is the Coming City of the South • •

Mark that prediction. With seven railroad outlets; two navigable rivers; with richest lands; with boundless forests of land and soft woods; with an hundred million of tons of iron ore and manganese within a few miles of the city; with coal, slate, marble and limestone in exhaustless quantities at hand, THE VERY NATURE OF THINGS would seem to decree a future for this city more brilliant than that promised to almost any ambitious city south of the Potomac and the Ohio.

MANUFACTURING INDUSTRIES are actually locating here, and millions of northern money is investing in city property and surrounding lands. Almost every week new riches are being discovered. These mountains are yielding up their treasures, and testimonials rapidly multiply that the hoary manufacturing North must soon grapple with the beardless industrial South for manual championship. The rapidity of the growth of Rome is marvelous alike to citizen and stranger. One real estate holder here—the Rome Land Co—has sold within the past ten months over one hundred thousand dollars worth of residence lots, and the demand steadily increases. Prospectors are invited to investigate the varied claims of this region. “All roads lead to Rome. One of the finest hotels in the South is located here. There is no better newspaper than the *Tribune* of Rome. Keep your eye on Rome.”

DECATUR, ALA.

POPULATION.—In March, 1887, 1,200; in July, 1888, 7,000; an increase of over 500 per cent. in sixteen months.

TRANSPORTATION.—Thirty navigable rivers will be accessible by steamers from the wharves after the completion of the government works at Mussel Shoals, on the Tennessee river, in 1889. Two trunk lines of railroad are in operation at Decatur—the Louisville & Nashville, and the East Tennessee, Virginia & Georgia systems; and two more are in course of construction.

MANUFACTORIES.—There are already in operation, or nearly completed, forty manufacturing enterprises that will employ at least 3,500 skilled workmen. These will warrant a population of 20,000 in the near future.

HEALTH STATISTICS.—Death rate last year only 11 per 1,000 among the whites.

IRON.—The best grades of charcoal pig iron can be manufactured here at a cost not to exceed \$11.50 per ton.

COAL.—Coal for manufacturing purposes is now delivered in Decatur, by rail, for \$1.60 per ton. In a few months the mines up the river will deliver coal for about \$1.25 per ton.

TIMBER.—The finest timbers in the world are on the banks of the Tennessee river, adjacent to Decatur. Decatur is one of the largest hard wood producing centers in the South.

SCHOOLS AND CHURCHES.—Good school and church facilities are here already.

FARMING LANDS.—Decatur is the center of one of the finest agricultural regions in the South. The Tennessee valley produces all kinds of small grain, potatoes and fruits, as well as products characteristic of the South, such as cotton, tobacco, etc.

Review of Decatur's Growth up to July, 1888.

The following enterprises have been located in Decatur and New Decatur, Ala., since February 1, 1887, (with few exceptions) and are in full operation, except where otherwise stated:

1. The Decatur Land, Improvement and Furnace Company was organized on the 11th day of January, 1887, and has laid out the town adjoining Decatur, known as New Decatur.

2. The Louisville & Nashville Railroad Company are now (July, 1888), completing their extensive new shops for the manufacture and repair of cars and locomotives; also roundhouses, etc., the whole covering 57 acres. It is estimated that these shops will employ 1,500 men.

3. The United States Rolling Stock Company are moving their extensive car shops from Urbana, Ohio, to Decatur, where they are putting up new works, covering 49 acres, for the manufacture of every description of cars. The machinery will be in place by September, 1888. The company will employ 500 men at first, and eventually 1,000.

4. The Decatur Charcoal & Chemical Works, running 48 ovens of a capacity of 55 cords of wood each, each cord producing two gallons of wood alcohol, 50 bushels of charcoal and 125 pounds of acetate of lime. This plant has a capacity to treat about 50,000 cords of wood per annum.

5. The American Oak Extract Company, the largest plant of the kind in the world, consuming 100 cords of wood daily in the manufacture of tanning extract. The plant is now being increased by one-third.

6. A 70-ton Charcoal Iron Furnace, nearly completed and ready for operation, built by Gordon, Strobel & Laureau, of Philadelphia, on the latest improved designs. Cost \$111,000.

7. The Decatur Iron Bridge Construction Company, an immense plant with admirable machinery for building every description of railroad and other iron bridges.

8. The Ivens & Son Machine Company. Building (brick) 280 feet by 100. Manufacture boilers, engines, etc., and do all kinds of foundry work.

9. Cotton Compress (Morse, 90 inch.) built by Steers & Co., of New Orleans. Cost \$75,000, completed. The buildings are of brick and iron with stone foundation and have the largest storage capacity in the South.

10. The Decatur Car Wheel & Manufacturing Company. Capacity, 100 wheels per day at present; will be increased as fast as possible, as the company cannot now supply their orders.

11. Southern Horseshoe Nail Factory. These extensive works are being constructed, and will shortly be in operation.

12. Decatur Waterworks (both direct pressure and Holly system) now being constructed by Howland & Ellis, of Boston, Mass. There will be 38 miles of pipe, of which over one-half are laid already. The water will be turned on about September next, and Decatur will have an unrivaled water supply.

13. Moulthrop & Stevens' mammoth brick yard, occupying over 7 acres and employing 50 men, their steam machinery having a capacity of 75,000 brick per day. There are five other brick yards in Decatur, and brick can be furnished at the present time at from \$5 to \$6 per thousand.

14. H. S. Freeman's lumber mills and lumber yard. Daily capacity of mill 15,000 feet. Handles 2,500,000 shingles yearly, besides laths.

15. Arantz Brothers' saw mills and lumber yards. Operate 3 band-saws. Daily capacity of their mills 60,000 feet.

16. Decatur Lumber Company's saw mill, planing mill and dryer. A very large establishment.

17. Berthard & Company's sash, door and blind factory.

18. The Hoosier Mills & Building Company.

19. The Southern Lumber Company. Make sash, doors and blinds.

20. J. D. Jervis & Company's extensive factory for sash, doors, blinds, stairs and hardwood finish.

21. Decatur Builders' Supply Company's lumber yards and planing mills.

22. Decatur Artificial Ice Company; capacity 6 tons daily, to be increased shortly to 15 tons.

23. Decatur Cornice & Roofing Company; manufacture galvanized iron cornices and iron and tin roofing.

24. The Decatur Street Railway, running cars over 3½ miles of track. Will have 2½ miles more completed shortly. Is equipped with new rolling stock.

25. The Decatur Telephone Company, operating over 80 stations.

26. The Decatur Electric Light Co., running 30 arc lights (Brush system).

27. Grant & Company's furniture factory.

28. Decatur Building Association.

29. Bucheit's Bottling Works.

30. Decatur Printing Company.

31. Artificial Stone Works.

32. Decatur Plumbing & Supply Company.

33. Alabama Lumber & Fruit Package Company.

34. Decatur Carriage Company.

35. First National Bank. Paid up capital \$100,000.

36. Exchange Bank of Decatur. Capital \$100,000.

37. One daily and two weekly papers.

38. The new "Tavern" Hotel, in full operation, owned by the Decatur Land Improvement & Furnace Company, delightfully situated on their own grounds, magnificently furnished by the Robert Mitchell Furniture Company of Cincinnati, Ohio, with room accommodations for at least 125 guests. There are five other hotels in Decatur.

39. The Decatur Land, Improvement & Furnace Company's incandescent electric plant, furnishing lights to the "Tavern," also to stores, offices and private dwellings.

A block to contain an opera-house, stores and offices, is now being built by a joint stock company at a cost of \$60,000.

The Louisville & Nashville Railroad Company handle daily in their depot yards 640 cars, 360 going South and 280 North; employ 85 men, and pay out to employees \$6,000 monthly.

The East Tennessee, Virginia & Georgia Railway Company handle in their yards 150 to 200 cars, employ 14 men, and pay out in wages \$720 per month.

In March, 1887, the number of inhabitants in Decatur was 1,200; in March, 1888, 7,000 in Decatur and New Decatur. Since January, 1888, there have been over two hundred houses erected; many of them are substantial brick business houses.

The Decatur Land, Improvement & Furnace Company is offering most favorable terms to parties who will purchase lots for the purpose of building homes.

The capital stock of the company, by retirement of the treasury stock, is reduced to 50,000 shares, or \$5,000,000, of which 45,659½ shares have been issued and are now outstanding. It is largely held as an investment by small holders scattered through different States, very many of whom have also bought property in Decatur, and by persons engaged in business and various occupations in Decatur.

The strong financial condition of the company can best be appreciated by a perusal of its published statements of July 1st, 1888, a copy of which can be obtained from the secretary at New Decatur, Alabama.

For Maps, Illustrated Pamphlets, and Specific Information, address

The Decatur Land, Improvement & Furnace Company

NEW DECATUR, ALA.

Anniston

THE CENTER OF
Iron and Cotton Industry
AND MINERAL WEALTH.

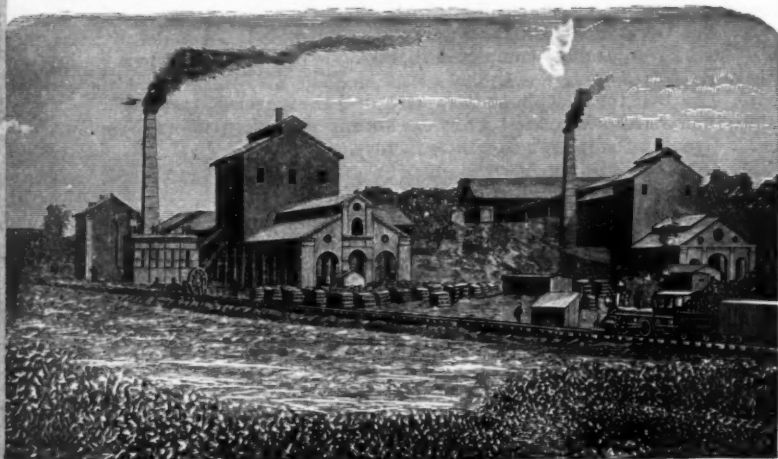
"The Model City of the South."

IT IS

The Profits of Labor only that can add to the wealth and prosperity of a nation or community. It is this only that can make business successful and profitable, sustain and add to the value of real estate.

WHERE

Nature's resources are greatest, where nature's capital in rich agricultural lands, and where iron, coal and other useful minerals are most abundant, most accessible and of superior quality for all purposes, there will capital find its safest investment, largest returns and labor reap its richest reward. It is to the Anniston District where the best professional mining engineers and experts of the United States declare the great center of the iron industry of the South will drift, where its manufacture will be most permanent and profitable, and where ores in the greatest abundance and accessibility exist, and where they will be most easily mined, that this applies.



WOODSTOCK FURNACES—ANNISTON.

The Development of the Past Fifteen Years

Confirms all this, and every year convinces the experts of the correctness of their judgment. It is no longer opinion based on scientific and practical education; it is a fact that is clearly and successfully demonstrated, so that the visitor to the Anniston District can see at every step. The four iron furnaces that have been so long and successfully operated, and the new plant now being erected, and rapidly approaching completion, which will be capable of producing one hundred thousand tons of pig iron a year, demonstrate that

NOWHERE ELSE IN THE SOUTH

Has the iron industry been so profitable and so successful, or been established on so permanent a basis, and of no district is this so universally conceded by all, while nowhere else have arrangements been perfected and already established on so complete a scale to work the crude iron into higher branches of manufacture to increase its value, and to bring into the district the profits of skilled labor. **THE GREAT CAR WHEEL WORKS OF NOBLE BROS. & CO.**, their rolling mill and steam forge and machine shops, and the Alabama Car Works, have been absorbed by the

UNITED STATES ROLLING STOCK COMPANY,

With a capital of \$4,000,000, for the purpose of adding to and enlarging the entire plant to build **TWENTY CARS A DAY**. Everything that goes into the creation of a car, except the tin for the roof and the wire nails, will be created from Anniston's crude material by her labor and skill. Fifty tons of wheel iron will be made into car wheels daily, twenty tons into car axles, fifty tons of pig iron into car and other castings, and fifty tons into bar iron and bolts, making nearly ten thousand dollars per day added to the wealth of the country by profitable labor converting nature's capital to the use of man. This company have a capital of \$4,000,000, and their Anniston works will represent a cash outlay of \$1,000,000. One thousand skilled mechanics will be employed as soon as the great enlargements under way can be completed.

THE STEEL BLOOMARY

Consumes and increases the value of twenty tons of pig iron per day, while the Pipe Foundry converts to the use of man **TWO HUNDRED TONS OF PIG IRON PER DAY** in one of the largest and best planned and most convenient labor-saving works on this continent. *The Foundry of Murray & Stevenson, Engine and Machine Works of Pinder & Co., and Boiler and Sheet Iron Works of J. & D. Noble*, all add to the consumption of crude material by the creation of finished work.

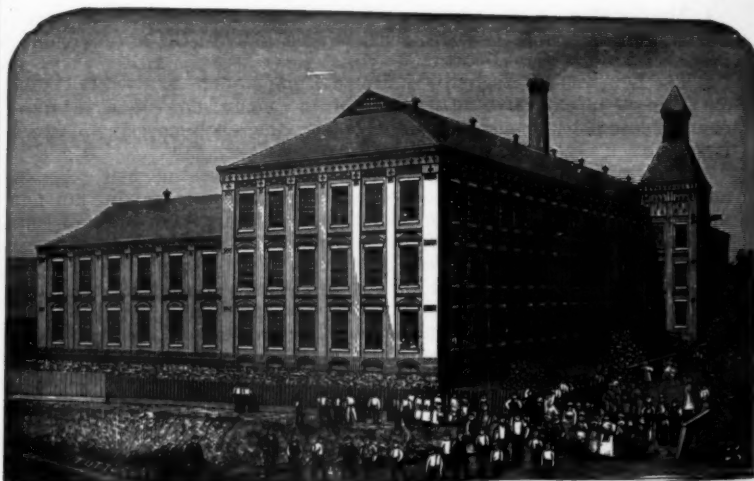
NOR IS IT TO IRON ALONE

That Anniston relies for increase of wealth and population. The Cotton Factory, with eleven thousand seven hundred spindles and three hundred and seventy-five looms, employing over three hundred and fifty operatives, adds greater value to the products of agriculture by converting six thousand bales of cotton into cotton cloth. The immense ninety-inch Morse Cotton Compress, with its brick warehouses, is fast making Anniston a cotton market and commercial center, and aiding its wholesale and retail merchants to extend and hold the trade of the country tributary to Anniston that its system of railroads has opened to them. The Georgia Pacific, the East Tennessee, Virginia & Georgia Railroad systems,

Give Direct Communication and Through Rates

To all parts of the country, while the Anniston & Atlantic Railroad, built by Anniston capital to open up new agricultural and mineral resources, gives Anniston, by connection with the Central of Georgia system, communication with the Atlantic sea coast and the new Anniston & Cincinnati Railroad, built and owned by Anniston citizens, opens up new resources and connections, and a shorter line with the great Northwest.

The proposed extension of the Anniston & Atlantic Railroad to Blocton will give another and shorter line to the great Cahaba Mines, producing the very best coal for domestic and manufacturing purposes in the South. Forty thousand acres of these coal lands, upon which a million and a half dollars have been lately spent in opening new mines and building several hundred coke ovens, **ALL OWNED AND CONTROLLED BY ANNISTON CAPITAL**, and developed to mine and manufacture three thousand tons of coal and coke per day, secures to Anniston for generations to come a full and certain supply of cheap fuel for all her industries, operated where a rich agricultural country can feed a manufacturing and commercial people, and where the



ALABAMA MANUFACTURING COMPANY'S COTTON MILL—ANNISTON.

Best, Healthiest and Most Invigorating Climate in the World,

With mountain air and pure water, and an elevation of nine hundred feet above tide water, insures the health and comfort of the workman and his family; where health and comfort stimulate and lighten labor, and secure to it and its industries the reward due to both. It is these advantages which have been given by nature that enabled Anniston's citizens to create her past and present prosperity, and which secure her future. It is that they may participate in and avail themselves of these advantages that Anniston invites **NEW CAPITAL AND TALENT AND ENERGY** from all sections. We invite all to come and see, and on the spot to judge for themselves of Anniston's great resources and possibilities. The comfort and quiet of the famous Anniston Inn will make a visit to our city a treat and pleasure. Any information, attention and courtesy will be given and shown by addressing or applying to the

ANNISTON CITY LAND CO., Anniston, Ala.

CONSTRUCTION DEPARTMENT

WE PUBLISH, every week, a list of every new factory, of what-kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

Alexander City—Stamp Mill.—Mr. Dean will, it is said, erect a stamp mill on the Ulrich place, 7 miles from Alexander City.

Aaniston—The Corning Land & Loan Co., reported last week as organized with R. H. Cobbs as president, will increase capital stock to \$100,000.

Bessemer—Kaolin Mine.—B. E. Grace, Sr., will develop a kaolin mine.

Birmingham—Lumber.—The Birmingham Lumber Co., capital stock \$25,000, has been chartered by J. Morgan Smith and others.

Birmingham—Electric Light Plant.—A. W. Fuller is organizing a company to erect an electric light plant.

Birmingham—Houses.—Averett Bros. will shortly build 20 more houses.

Birmingham—Coal.—L. F. Bradfield and others have chartered the Bradfield Houston Coal Co., capital stock, \$10,000. They contemplate opening mines in the spring.

Birmingham—Coal Mine.—Joseph T. Moncrief and others will shortly open a large coal mine on the line of the Kansas City, Memphis & Birmingham Railroad.

Birmingham—Iron Furnace, Steel Works and Bridge Works.—The Birmingham Mining & Manufacturing Co. have decided to issue the \$300,000 of bonds lately mentioned, and build a 100-ton furnace, basic steel works and iron bridge works at Gate City, near Birmingham. They lately put in blast a new 100-ton furnace at Trussville.

Birmingham.—The Pioneer Mining & Manufacturing Co. have let the contract for the erection of 53 houses, previously mentioned.

Birmingham—Town and Hotel.—The Ingram Land & Improvement Co. have been chartered, and will start the new town in Blount county to be called Ingram, previously mentioned. A hotel will be built. A. J. Ingram is interested.

Birmingham—Carpenter Shop, &c.—The Georgia Pacific Railroad Co. are enlarging their yards and building a carpenter shop 60x175 feet.

Bluffton—Hotel.—Mr. Keller, of Tallapoosa, Ga., has the contract to erect a hotel for the Bluffton Land Co.

Bluffton—Buildings.—Mr. McGinness will erect a number of buildings.

Florence—Railroad.—Cutler Smith, W. P. Ragdale, J. W. Falk and others have incorporated the Mussel Shoals, Elk & Tennessee River Railroad & Transfer Co., capital stock \$150,000, to build a railroad from the Mussel Shoals in the Tennessee river via Florence to Waterloo.

Gadsden—Hardware Factory.—George Geer, reported last week as to erect a factory for manufacturing hardware specialties, will move same from Cartersville, Ga. He will soon commence work.

Irontdale—Furniture and Coffin Factory.—The Irontdale Manufacturing Co. has been organized to manufacture furniture,

coffins, boxes and building materials, and will commence operations at once. F. S. Daniels is president and manager. Capital stock is \$10,000.

Selma—Saw and Shingle Mill, &c.—Cook & Cline, previously mentioned as building a saw and shingle mill, lath mill, etc., have organized as the Selma Saw Mill & Manufacturing Co.

Sheffield—Wood-working Factory.—The Sheffield Manufacturing Co. will build an addition, two stories, 30x40 feet, to their factory, and will put in additional wood-working machinery.

ARKANSAS.

Cabot—Gold Mine.—T. E. Hendricks is developing a gold mine.

Clarendon—Ice Factory.—E. A. Dickson, of Paris, Texas, contemplates erecting the ice factory lately mentioned.

Cushman—Well.—W. J. McDewitt is sinking a well for the Keystone Manganese Iron Co.

Dallas—Manganese Mine.—Capt. Ward will resume work at his manganese mine.

Fort Smith—Depot.—The freight depot previously mentioned as to be built by the Missouri Pacific Railway Co. will be a brick one, owing to council refusing permit for the erection of a corrugated iron one.

Hot Springs—Mineral Water Factory.—J. E. Hayden and E. C. Hart have formed the Hot Springs Carbonating Co., to manufacture mineral waters.

Hot Springs—Reduction Works.—The May Mining Co. are receiving the machinery for their reduction works previously reported. It is stated that the capacity will be 200 tons daily.

Judsonia.—The Judsonia Building Association has been incorporated with \$10,000 capital stock.

Little Rock—Buildings.—John G. Fletcher will erect a large four-story building, and a three-story one on Main street.

Newport—Stave Factory.—Morrison, Decker & Co. have started up their stave factory after a year's idleness.

Peach Orchard—Lumber Mills and Railroad.—Michigan parties have purchased the Ashley Lumber Mills and 1,500 acres of timber lands, and will put additional machinery in the mill and build a railroad.

Pine Bluff—Gymnasium, &c.—Jore B. Melville has donated a site and \$15,000 for the erection of a public library, gymnasium, &c.

Texarkana—Depot.—The St. Louis, Iron Mountain & Southern Railroad Co. (office, St. Louis, Mo.) and other railroad companies have selected a site for the union depot previously mentioned as to be erected. It will be of brick 36 by over 200 feet long and will cost probably \$75,000.

Texarkana—Street Railroad.—The capital stock of the Texarkana Street Railway Co. has been increased to \$40,000.

Warren—Building.—Bartlett & Thompson, of Little Rock, Ark., are preparing plans for a fire-proof building to be erected by Bradley county.

FLORIDA.

Caryville—Lumber Mill.—Menefee & Co. are putting four new boilers in their lumber mill to increase capacity.

Dade City—School.—The Educational Joint Stock Co. contemplate erecting a school building.

De Funiak Springs—Cigar Factory.—F. A. Gonzales and Mr. Valdes will start a large cigar factory. Capital will be \$50,000 or more.

Key West—Dock.—The contract for building a stern dock for the U. S. Govern-

ment has been awarded to the International Bow & Stern Dock Co., of New Jersey, at \$30,000.

Ocala—Depot.—The Florida Southern Railroad Co. (office, Palatka) will build a new freight depot and enlarge their passenger depot.

Ocala—Machinery.—William Fox has purchased a 100-horse power engine and boiler to run the machinery at the Sub-Tropical Exposition to be held shortly. Electric lights are to be put in.

Ocala—Street Railroad.—James Cribbitt, Charles M. Brown and Daniel M. Miller have incorporated the Ocala Street & Suburban Railroad Co., capital stock, \$100,000.

Orlando—Packing-house.—W. A. Cooper is erecting an orange packing-house.

Pensacola—Fire-alarm System.—The contract to put in a fire-alarm system has been awarded to the Gamewell Fire-Alarm Telegraph Co. at \$3,140.

Quincy—Railroad.—It is rumored that the Savannah, Florida & Western Railroad Co. (office, Savannah, Ga.) contemplate building a branch road from some point in Georgia to Quincy.

Summerville—Saw Mill.—J. J. McGaskill will probably rebuild his saw mill, reported last week as burned. Loss was \$16,000.

Villa City—Hotel.—George T. King is preparing to build a hotel.

GEORGIA.

Americus—Brick, Tile and Sewer Pipe Works.—A. J. Hamil, reported last week as purchasing about 50 or 60 clay lands and to manufacture pottery, will organize the Hamil Brick Co. to manufacture brick, tile and sewer pipe. Capital stock will be \$20,000. He wants to purchase machinery.

Atlanta—Medicine Factory.—The Topaz Chinchonia Cordial Co., H. B. Eubank, president, will start a medicine factory. Capital is reported to be \$50,000.

Atlanta—Bleachery.—The Fulton Cotton Spinning Co. contemplate erecting a large bleachery at their cotton mills.

Atlanta—Water Works.—There is some talk of forming a stock company to furnish water for manufactories. If anything is done Jacob Elsas can give information.

Atlanta—Lumber Mill.—The Tunis Lumber Co., of Baltimore, Md., are negotiating to build a large lumber mill with a daily capacity of 200 M feet.

Atlanta—Mining and Manufacturing.—Joseph E. Brown, Julius L. Brown, Jacob W. Seaver, John W. Hoffman and others have incorporated the Georgia Mining, Manufacturing & Investment Co., capital stock \$1,000,000, to mine coal, iron ore, stone, etc.; manufacture coke, iron, etc. This is probably a consolidation of the Walker Iron & Coal Co., operating a furnace 63x16 feet at Rising Fawn; the Chattanooga Iron Co., operating a furnace 61x13 feet at Chattanooga, Tenn.; the Dade Coal Co., and the Castle Rock Coal Co.

Augusta—Electric Lights.—The Sibley Manufacturing Co. have put incandescent electric lights in their cotton mill.

Augusta—Cotton Mill.—The Algernon Mill have put in new machinery to change their product from plaids and checks to yarns and rope.

Augusta—Railroad.—The Chattanooga, Rome & Columbus Railroad Co. (office, Rome), previously mentioned as contemplating building branches to Savannah and to other places, expect to build to Augusta also.

Augusta—Cotton Mill.—The Warwick Cotton Mills have added a new flume, wheel pit, water wheel and other machinery.

Augusta—Dummy Railroad.—The Fairmont & Augusta Railroad Co., lately mentioned as chartered by the legislature at Atlanta, contemplate building a dummy railroad from the 5-mile post on the Georgia Railroad to Augusta. W. T. Wheelless is interested.

Augusta—Bleachery.—A bleachery to cost \$200,000 is reported to be built.

Brunswick—Sewerage System.—The committee on the sewerage system, previously mentioned as contemplated to be built, recommend that bonds be issued and that work be started at once. The estimated cost is \$112,000.

Forsyth—Cotton Mill.—The Forsyth Manufacturing Co., previously mentioned as being organized to build a cotton yarn mill, have commenced work on building. They have purchased a 100 horse-power engine.

Gainesville—C. C. Sanders, Henry Chase and others have incorporated the Farmers' Loan & Trust Co., capital stock \$10,000. They are privileged to engage in mining and manufacturing.

Griffin—Wagon and Carriage Factory.—Jackson G. Smith, of Barnesville, will, it is stated, move his wagon and carriage factory to Griffin.

Macon—Cotton Mill and Oil Mill.—The Manchester Manufacturing Co., previously reported as chartered to build a 10,000-spindle mill to manufacture yarn, rope, cloth, etc., have commenced work. Capital stock is \$100,000. The main building will be 280x56 feet. They will probably build the cotton-seed oil mill previously mentioned also.

Marietta—Street Railroad.—The Marietta Street Railroad Co., lately mentioned as chartered by the legislature at Atlanta, expect to begin work early in the spring. Road will extend from two miles south of Marietta to Kennesaw mountain, 5 miles. A. Armstrong, Box 33, can give particulars.

Newnan—Cotton Mill.—Arnall & Farmers have purchased the 2,000-spindle cotton yarn mill of the Wilcoxon Manufacturing Co., and will probably add some new machinery next summer. They want to buy now a power pump, to be run by a belt, for fire protection.

Savannah—Street Railroads, Hotel, &c.—The Coast Line Railway Co. have purchased a controlling interest in the City & Suburban Railway Co., operating 4 lines of road. It is rumored that a line will be built to Warsaw Island, where a hotel is reported to be built.

Savannah—Hotel.—The Tybee Hotel Co., previously mentioned, will receive the proposals for building their hotel until January 10.

Savannah—Wells.—Alvin N. Miller, superintendent water works, will sink 6 more artesian wells soon. He recommends that another main be laid between the works and the city.

Savannah—Buildings.—J. C. Peck, of Atlanta, contemplates erecting several buildings to cost \$25,000.

Savannah—Burglar-alarm System, &c.—Herman Myers, John J. McDonough, William Garrard and others have chartered the Savannah Electrical Co., capital stock \$50,000. They will establish a burglar-alarm and telegraph system, etc.

Taliaferro—Corn Mill.—Hill, Taliaferro & Foster will rebuild at once their corn mill reported last week as burned.

Taliaferro County—Iron Mines.—It is reported that Thompson & Dean, of Birmingham, Ala., previously mentioned as to develop iron ore lands, will soon open mines.

Wenona—Lumber Mill.—The Dooley Lumber Co. contemplate adding planing,

lath and shingle machinery to their saw mill.

KENTUCKY.

Greenup—Spoke Factory.—E. W. Jordan will start at once a factory for manufacturing spokes and buggy timber.

Lexington—Twine Factory.—There is talk of a twine factory being started by Eastern parties.

Louisville—Woolen Mill.—The Southern Woolen Mills, which have been idle about one year, have been secured by a re-organized company who will put them in operation.

Louisville—Office Building.—The Commercial Club Building Co., previously reported as to erect a large ten-story office building, have placed \$228,000 of their bonds. It is stipulated that the building and site shall cost at least \$400,000.

Louisville—Iron and Nail Works.—The Cobbs Iron & Nail Co., of Aurora, Ind., are thinking of moving their works to Louisville.

Louisville—Clothing Factory.—It is reported that a company has been formed to start a clothing factory. The secretary Commercial Club can probably give information.

Louisville—Bobbin and Shuttle Factory.—The Kentucky Bobbin & Shuttle Co. has been organized to manufacture bobbins and shuttles with E. W. Chamberlain as president; W. C. Garland, vice-president, and R. H. Robinson, secretary and treasurer. Authorized capital stock is \$50,000.

Louisville—Cotton Mill.—It is reported that a company is being organized to build another cotton mill. This is in addition to the cotton mill lately mentioned as to be moved to Louisville from the East.

Louisville—Brewery and Distillery.—Shafer & Meyer, brewers, have incorporated as the Schaefer-Meyer Brewing Co., capital stock \$250,000, to manufacture beer, liquors, &c.

Louisville—Distillery.—The plant of the Marion County Distillery Co. has been purchased by William Patterson for \$70,000.

Louisville—Machine Works, &c.—W. T. Pyne, H. B. Wintersmith and H. R. Pyne have incorporated the W. T. Pyne Mill & Supply Co. to manufacture and sell machinery, mill supplies, &c. They will have a capital stock of \$100,000.

Madisonville—Flour Mill.—Charles R. Ross will build a 175-barrel roller flour mill and is contracting for machinery.

Maysville—Canning Factory.—A canning factory is projected.

Nicholasville—Grainery.—Brown Bros. will erect a grainery.

Nicholasville—Building.—N. D. Miles contemplates erecting a large brick building, and arrangements will probably be made for making the upper part an opera house.

Owensboro—Pork Packing.—There is talk of starting a pork-packing establishment.

Owensboro—Railroad.—The contract to build the Owensboro, Green River & Falls of Rough Railroad to Fordsville, previously reported, has been awarded to the Central Construction Co., of Henderson, C. H. Dishman, president. They will soon commence work. Joseph King has the contract to clear the right of way.

Princeton—Iron Mining.—The Princeton Iron & Mining Co., previously reported, are opening iron ore mines now and will enlarge operations in the spring.

Princeton—Furniture Factory.—About \$2,000 of additional machinery have been put in the furniture factory of Sigler & Conway.

Princeton—Flour Mill.—W. J. Myers & Bros. have put about \$3,000 of new machinery in their flour mill.

Princeton—Saw Mill.—Tucker Bros. contemplate adding to their saw mill machinery for manufacturing wagon materials.

Waco—Pottery and Sewer-pipe Works, &c.—The Waco Mining & Manufacturing Co., capital stock \$200,000, has been organized and will start the pottery and sewer-pipe works lately mentioned. It is contemplated to start glass and salt works also. C. L. Searcy is president.

LOUISIANA.

Berwick—Sugar-house.—John N. Pharr will put machinery in his sugar-house by next season to use the diffusion process.

Greensburg—Jail.—St. Helena parish will build a jail to cost not less than \$3,000.

Houma—Saw Mill.—D. S. Cage and others will enlarge their saw mill 20 miles from Houma.

Monroe—Electric Light Plant.—F. G. Hudson, J. H. Andrews, M. J. Duty and others have chartered the Monroe Electric Light & Power Co., and will erect the plant lately mentioned. Capital stock is \$10,000. They have adopted the Van Depoele system and will put in plant at once.

New Orleans—Saw Mill.—M. J. McAdam has moved his saw mill to another location.

New Orleans—Building.—The Knights of Pythias, Castle Hall Association, have purchased a building and will spend about \$9,000 in improving it.

Pattersonville—Sugar-house.—L. G. Clark & Bros. contemplate putting in their sugar-house by next season machinery to use the diffusion process.

MARYLAND.

Baltimore—Andrew L. Black, florist, Chase and Concord streets, will put in a 12 horse-power engine and boiler.

Baltimore.—The Bartholomew Brewing Co. will erect a 10 horse-power engine and boiler at 237 and 239 South Central avenue.

Baltimore—Houses.—Richard T. Foster will build 18 two-story houses on Bruce alley, and Charles A. Pindell, 3 three-story houses on Lanvale street.

Baltimore—Stable.—Plans are being drawn for a four-story addition, 50x100 feet, to be built to the stable of J. S. Ditch & Bro., on Second street (in the Annex). It will be used as a carriage-house and waiting-room.

Baltimore—Brake Works.—The Boyden Power Brake Co. will soon commence building their works, previously reported, for manufacturing brake equipments for cars and locomotives.

Baltimore.—William C. Eliason and others have chartered the Tolchester Excursion Co. Capital stock, \$25,000.

Baltimore—Transportation.—Joseph R. Foard and others have chartered the Joseph R. Foard Transportation Co., capital stock \$250,000, to succeed Joseph R. Foard.

Greensboro—Saw Mill.—William C. Satterfield, lately mentioned as building a canning factory, is erecting a saw mill also.

Havre de Grace—Quarries.—Thomas Baumgardner, Joseph L. Carpenter, Jr., Charles E. Whiteley and others have chartered the Serpentine Co., capital stock \$250,000, to develop serpentine rock quarries.

Oakland—Soapstone and Clay Mining.—The Pittsburg Mineral Co. will open the soapstone quarry previously mentioned in the spring. They are opening clay deposits now.

Salisbury—Sash and Door Factory.—A sash and door factory is being built by Mitchell & Murray.

Salisbury—Guano Works.—The Parks Guano Co., of Baltimore, have purchased wharf property, and will build large works in the spring.

Salisbury—Basket and Crate Factory.—The Wilmington Basket & Crate Factory, of Wilmington, Del., are negotiating for a site to remove their factory to Salisbury.

Utica—Corn Mill.—Snooks Bros. contemplate erecting a small corn mill at their creamery, and want to purchase machinery. Second-hand is preferred. It must not require more than 6 horse-power.

Washington, D. C.—Church.—The Tabernacle Church will build an annex.

Washington, D. C.—Building.—The Young Men's Christian Association are contemplating the erection of a new building, but nothing definite is decided on.

Washington, D. C.—The Co-operative Building & Investment Co. has been chartered with John T. Moylum and others as directors.

Washington, D. C.—Buildings.—Andrew Gleason will erect five dwellings on North Capitol street to cost \$15,000; John Hargraves, four brick dwellings on M street, and G. W. Phillips, five dwellings on Massachusetts avenue, N. E., to cost \$12,000.

MISSISSIPPI.

Shubuta—Spoke and Hub Factory.—A. P. Hand will build the spoke and hub factory mentioned last week, and wants to purchase all necessary machinery. Second-hand machinery in good condition will do.

West Point—Ice Factory.—R. N. Dominick is interested in the ice factory reported last week as to be built.

West Point—Machine Shop.—A. M. Wetherbee contemplates starting a machine shop.

Winona—Wagon & Implement Factory.—The Farmers' Alliance will start a wagon and implement factory, and have purchased a building with engine.

NORTH CAROLINA.

Asheville—Publishing.—The publishers of the Daily Citizen have organized as a stock company, with \$20,000 capital. They will put in some new machinery.

Bilesville—Corn Mill.—A corn mill will be started by Crowell & Ivy.

Charlotte—Church.—The Methodists will build a mission church soon.

Charlotte—Gold Mine.—It is reported that English capitalists have purchased the Rudisill gold mine.

Seven Springs—Mill.—Alva Daly, whose mill was reported last week as burned, contemplates rebuilding later in the year.

Salisbury—Spoke and Hub Factory, &c.—A party in Ohio has been corresponding in regard to moving his factory for manufacturing spokes, hubs, rims, &c., from Ohio to Salisbury.

Valle Crucis—Silver Mining.—General Leventhorpe has optioned land supposed to contain silver deposits.

Wilmington—Railroad.—The Wilmington & Southern Railroad Co. is to be incorporated at the next session of the legislature.

SOUTH CAROLINA.

Charleston—Phosphate Works.—Two new phosphate works are reported to be built in the near future.

Charleston—Foundation.—Will A. Freiret, Washington, D. C., will receive until January 12 proposals for the labor and materials required in the erection and completion of the excavation and pile and concrete foundations of the U. S. courthouse and postoffice building.

Charleston—Match Factory.—A. F. C. Cramer is making investigations with a view to starting a match factory. He wants information in regard to the machinery.

Charleston—Underwear Factory.—A factory for manufacturing underwear is to be started.

Charleston—Necktie Factory.—A necktie factory is reported to be started.

Charleston—Brewery and Bottling Works.—Cramer & Kersten have organized the Palmetto Brewing Co., capital stock \$100,000, to operate their brewery and bottling works.

Columbia.—The bills introduced in the legislature to incorporate the Gold Hill Mining Co., the Palmetto Land, Lumber & Transportation Co., the Chester Street Railway Co., the Orangeburg City Railway Co., the Wilson & Summerville Railroad Co., the Cheraw & Barnwell Railroad Co. and the Winnsboro Cotton Mills have become laws.

Florence—Courthouse and Jail.—Florence county will build a courthouse and jail to cost about \$25,000.

Prosperity—Hotel.—The Piedmont Land Improvement & Investment Co. contemplates, it is said, building a hotel.

Spartanburg—Dummy Railroad.—A dummy railroad to Clifton, about 7 miles, is projected. The cost is estimated at \$50,000.

TENNESSEE.

Calhoun—Broom Factory.—A. A. Farrington, reported last week as starting a broom factory, will enlarge it next spring.

Chattanooga—Basket and Woodenware Factory.—G. H. Cherry and Mr. Benjamin, reported last week as starting a basket and woodenware factory, are organized as the Chattanooga Basket & Package Co. They will manufacture wooden batter dishes also.

Chattanooga—Water Works.—The City Water Co., lately mentioned as increasing capital stock to \$800,000 and to lay 10 miles more of mains and put in additional pumping machinery and filters, have issued \$1,000,000 of bonds to make the improvements. They are about commencing work on their reservoir, which will have a capacity of about 6,000,000 gallons.

Chattanooga—Electrical Railroad.—The Chattanooga & Highland Park Electric Street Railroad Co., lately mentioned as contracting for machinery for their electrical railroad, have purchased a controlling interest in the Mission Ridge Incline Railway and will, it is stated, equip it also with electric motors.

Chattanooga—Railroad.—The Chattanooga Southern Railroad Co. are about commencing work on their road, previously mentioned. J. C. Henderson is general manager.

Chattanooga—Sash Factory, &c.—Heyser & Co., lately mentioned as enlarging their lumber mill, will, it is said, add soon a sash, door and blind factory.

Chattanooga—Coke Ovens.—It is reported that the Consolidated Coal & Iron Co. will soon build more coke ovens.

Chattanooga—Foundry and Pipe Works.—It is stated that the Chattanooga Foundry & Pipe Co. contemplate enlarging their works.

Goodrich—Iron Furnace and Alcohol Works.—The Warner Iron Co., mentioned last week as purchasing the charcoal furnace and wood alcohol works of the Standard Charcoal Co., will put the works in running order at once and will put in electric light plant. They want to purchase at once a blowing engine, new hoist rig, electric light plant, small locomotive, boilers, &c.

Helenwood—Tobacco Factory.—The report last week that I. S. Reed is organizing a company to start a tobacco factory is not true.

Jackson—Printing Office.—T. B. Raff will re-establish his printing office mentioned in this issue as burned.

Knoxville—Saw Mill.—It is reported that the Knoxville Lumber Co. will build a saw mill.

Knoxville—Tool Factory.—The J. W. Mixer Saw Tool Co. has been incorporated by J. W. Mixer, E. L. Edes, E. W. Hathaway, E. W. Belcher and J. F. Churchill.

Knoxville—Wagon Factory.—Post & Keller will build a wagon factory on Crozier street.

Memphis—Piles.—Proposals for furnishing 150,000 lineal feet of cypress piles will be received until January 15 by Smith S. Leach, captain of engineers.

Memphis—Oil Mill.—It is stated that the cotton-seed oil mill lately mentioned will be built by Napoleon Hill, S. H. Brooks and others.

Memphis—Electrical Railroad.—Holmes Cummins and associates will build an electrical railroad and have about closed contract for outfit with the Sprague Motor Co.

Memphis—Street Railroad.—The Bayou Geyoso Street Railway & Improvement Co. has been chartered and will build a street railroad. A. Renkert is interested.

Nashville—Publishing.—A paper to be called the Herald will be published by D. B. Cooper.

Nashville—Electrical Railroad.—The McGavock & Mount Vernon Horse Railroad Co. will operate their road with electric motors, and have contracted for outfit of machinery with the Thomson-Houston Electric Co. of Boston, Mass.

Nashville—Building.—Jere Baxter will re-erect his large building mentioned in this issue as burned. The loss was about \$60,000.

Nashville—Gymnasium and Laboratory.—The Fisk University are adding a gymnasium and mechanical laboratory.

Tracy City—Coal Mines.—It is rumored that Northern parties are negotiating for about 2,000 acres of coal lands with a view to developing.

Pulaski—Water Works.—The water works referred to last week will be built as soon as authority to issue bonds can be secured from the legislature. The city has voted to build the works. The cost is estimated at about \$35,000.

Winchester—Timber Lands.—The report referred to lately that J. B. Shepard is negotiating for timber lands is not confirmed.

TEXAS.

Abilene—School.—Joseph E. Cockerell will receive plans and specifications for the school building previously mentioned as to be erected until February 4. It is to be two stories, with accommodations for 600 or 800 pupils and is to cost about \$100,000. Plans, &c., accepted will be paid for.

Austin—Implement Factory.—The Bryant Agricultural Implement Manufacturing Co., of Red River county, has been chartered.

Bexar—Street Railroad.—J. H. Kaufman, G. G. C. Lee, J. L. Lockwood and others have chartered the Bexar Street Railway Co., capital stock \$100,000.

Bowie—Railroad.—A railroad is reported to be built to the Bowie coal mines.

Dallas—Tinware Factory.—Wilson & Son, of St. Louis, Mo., will start a tinware factory to employ about 50 hands, and have leased a building 50x250 feet. Capital will be \$50,000.

Dallas—Railroad.—A New York syndicate, represented by M. H. McLaurin, has purchased the Dallas, Archer & Pacific Railroad charter mentioned last week and contemplate building the road.

Eagle Pass—Street Railroad.—A street railroad is reported to be built.

Fort Worth—Building.—The B. C. Evans Co. will erect a large building.

Fort Worth—Railroad.—The Texas Northwestern Railway Co. will hold a meeting on February 27 to authorize the directors to proceed with the construction and equipment of their road and to issue bonds for such purposes.

Georgetown—Building.—The Texas Chautauquan Society will erect their buildings, previously mentioned at Georgetown and will commence work at once.

Henrietta—Brick-yard.—W. A. Squires is preparing to start a brick-yard.

Henrietta—Factories.—A \$100,000 improvement company has been organized and contemplates starting several enterprises. W. A. Squires can give information.

Jefferson—Street Railroad.—The Lone Star Street Railway Co., reported last week as organized with W. S. Haywood as president, expect to build 3 miles of road this year.

Laredo—Hotel.—It is stated that the three-story brick hotel, lately mentioned as

to be built by Mr. Thompson, of California, will cost about \$50,000. He will soon commence work.

Lynchburg—Ferry.—The Lynchburg Ferry Co. has been chartered.

Rusk—Rolling Mill.—It is reported that J. Morgan Coleman, of Youngstown, Ohio, has contracted to build the rolling mill at New Birmingham, previously reported.

Taylor—Electric Light Plant.—J. E. Land, representing the Western Electric Light Co., of Chicago, Ill., is negotiating to erect a plant to cost about \$25,000.

Village Mills—Lumber Mills.—The Village Mills Co., lately mentioned as putting a new engine in their lumber mill, are putting in other machinery also, which will increase their capacity from 55 to 75 M feet daily.

VIRGINIA.

Alum Springs—Hotel and Springs.—The Peyton-Campbell Co., lately mentioned, will make extensive improvements to their properties.

Blue Ridge Springs—Canning Factory.—Rieley Bros. contemplate enlarging their canning factory.

Blue Ridge Springs—Ore Washer.—The Crozer Steel & Iron Co., of Roanoke, are putting in a new ore washer.

Bolington—Saw Mill.—Thomas J. Ball will move his saw mill to near Wheatland.

Cape Charles—Railroad.—The New York, Philadelphia & Norfolk Railroad Co. will increase their rolling stock and make other betterments.

Danville.—The Danville Land Improvement Co. is reported as formed.

Lexington—Wagon Factory.—W. H. Curd, of Lick Run, states that he does not contemplate moving his wagon factory to Lexington as stated last week.

Lynchburg—Factory.—John W. Daniel, of Washington, D. C., is negotiating with parties who contemplate establishing a large factory.

Lynchburg—Cross-ties.—Peter J. Otey, president Lynchburg & Durham Railroad Co., is advertising to purchase 50,000 cross-ties.

Lynchburg—Electric Light Plant.—The Piedmont Electric Illuminating Co. contemplate increasing the capacity of their plant.

Lynchburg—Iron Furnaces.—Efforts are reported as being made to organize a stock company to build an iron furnace.

Lynchburg—Building.—N. C. Manson, Jr., and John P. Pettyjohn have purchased a site to erect a large building.

Norfolk—Building.—The Colored Young Men's Christian Association contemplate erecting a building to cost about \$12,000, and are negotiating for a site.

Norfolk—Sea Wall.—The contract for repairing the sea wall at the Naval Hospital, lately mentioned, has been awarded to McFrederick & Berry, of Baltimore, Md., at \$15,698.

Orange County—Gold Mines.—Northern parties have purchased the Ambler gold mines and will, it is stated, develop on an extensive scale.

Portsmouth—Electric Light Plant.—The Edison Electric Light & Power Co., has been organized to erect an electric light plant with H. L. Maynard as president and John L. Watson as secretary and treasurer. The capital stock is to be not less than \$25,000 nor more than \$150,000. Plant will have a capacity of from 1,000 to 1,500 incandescent lights.

Richmond—Tobacco Factory.—The R. A. Patterson Tobacco Co. has been chartered to manufacture and sell tobacco, &c., and will succeed R. A. Patterson & Co. in that business. The capital stock is to be not less than \$100,000 nor more than \$500,000.

Roanoke—Iron Furnace.—The Crozer Steel & Iron Co. will build an additional

iron furnace, and have awarded the contract for its erection to James P. Witherow & Co., of Pittsburgh, Pa. It will cost about \$125,000. Their present furnace is 70x16 feet.

Roanoke—Water Works.—The water works will be extended. Howard Murphy, engineer, can give particulars.

Roanoke—Carriage Factory.—G. W. Hedrick, of Dayton, has been prospecting with a view to moving his carriage factory to Roanoke.

Spottsville—Saw Mill.—J. W. Fagua will move his saw mill to another site.

Staunton—Medicine Factory and Sanitarium.—The Valley Medical & Chemical Institute has been organized with Dr. F. W. Shelton as president; A. B. Arthur, vice-president, and Heber Ker, secretary. Capital stock is to be not less than \$200,000. They will start a hospital and manufacture a medicine, and contemplate building a large sanitarium.

Staunton—Iron Mines.—The North Mountain Iron & Coal Co. have purchased the Ferrol iron ore property and will commence mining operations at once.

Staunton—Factory.—Negotiations are pending for the starting of a factory to employ from 40 to 60 hands.

Staunton—Land.—The Coal River Land Co. has been incorporated to carry on operations in West Virginia by A. A. Low, H. M. Bell and others.

Staunton—Land.—The Rush Creek Land Co. has been chartered by A. A. Low, E. H. R. Lyman, H. M. Bell and others. Will operate in West Virginia.

Staunton—Coal Mining, Coke Manufacturing, &c.—A. A. Low, Joseph O. Low, H. M. Bell, R. H. Callett and others incorporated the Glade Creek Land Co. to mine coal, manufacture coke, &c. The capital stock is to be not less than \$200,000 nor more than \$1,000,000. Operations are to be carried on in West Virginia.

Staunton—Roundhouse.—It is reported that the Newport News & Mississippi Valley Railroad Co. (office, Richmond) have purchased a site to build a roundhouse.

Winchester—Electric Light Plant.—An electric light plant is contemplated.

WEST VIRGINIA.

Bramwell—Coal Mines and Coke Ovens.—William Booth, of Shamokin, Pa., and J. P. Bowen, James Bowen, Harry Bowen and James W. Fry, of Freeman's, W. Va., have chartered the Booth-Bowen Coal & Coke Co., capital stock \$100,000, to mine coal, manufacture coke, etc.

Charleston—Medicine Factory.—The factory of the Tyree Drug Co. will be moved from Staunton, Va., to Charleston.

Clarksburg—Coal Mining, &c.—The Columbia Coal & Coke Co. has been formed to mine coal, manufacture coke, etc., with a capital of \$500,000 or more.

Corinth—Coke Ovens.—The Oakland Coal & Coke Co. are building coke ovens.

Elm Grove—Flour Mill.—A roller flour mill with a daily capacity of 75 barrels has been erected by Bedillion & Co.

Fairmont—Coal Lands.—Parties interested in the Ohio River Railroad Co. (office, Parkersburg) have purchased about 5,000 acres of coal lands and will probably soon develop.

New Cumberland—Glass Works.—Glass works are reported to be built.

Stockyard—Stone Quarries.—W. G. Hudgin, of Alderson, has opened and will develop the brownstone quarry mentioned last week.

BURNED.

Baltimore, Md.—The cigar factory of Vito Pipitone, 1818 McCulloh street.

Brookhaven, Miss.—The gin and grist mill of M. J. Little, 5 miles from Brookhaven.

Jackson, Tenn.—The printing office of

T. B. Raff; loss \$2,000. Will be re-established.

Nashville, Tenn.—The large building of Jere Baxter; loss about \$60,000. It will be rebuilt at once. The office of the Banner Publishing Co. was damaged \$10,000 by the same fire.

Natchez, Miss.—The cotton-seed oil mill of the Adams Manufacturing Co. damaged \$2,000 by the bursting of a fly-wheel.

New Orleans, La.—The sugar refinery of Lonsdale & Co. damaged \$1,000 by fire.

Portsmouth, Va.—The saw mill of H. B. Wilkins damaged by a fire.

South Boston, Va.—The tobacco factory of Norwood & Evans.

Spring Place, Ga.—The saw and planing mill, grist mill and cotton gin of W. H. Jones & Co.; capital stock \$2,000.

Waco, Texas.—The opera house of Burgefield & Durst; loss \$50,000.

Wheeling, W. Va.—The packing-house at the Central Glass Co.'s works; loss about \$10,000.

The gins of F. Barksdale, Valley, Miss.; T. A. Meacham, in Independence county, Ark.; F. M. Usry, Dearing, Ga.; Mr. Roberts, Altheimer, Ark.; John Y. Barbee, Toulon, Tenn., and John Aldridge, 2 miles from Kinston, N. C., have been burned.

WATER WORKS TO BE BUILT.—PULASKI, TENN., Dec. 26, 1888.—Water works will be built by the corporation as soon as the legislature meets and authorizes the issuance of bonds for the purpose. The mayor, Hon. T. H. May, can give full particulars. The water works are an assured fact, as the voters have decided at an election held for that purpose. The intention is to put in a system of water works that will cost about \$30,000 or \$40,000. The ice factory is also an assured fact, and the board of directors are awaiting bids for the putting in of the machinery, &c. Address, J. H. Lightfoot, secretary and treasurer, who will give any information desired, and contractors had better write at once.

E. B. JONES.

BRICK, TILE AND SEWER PIPE WORKS.—AMERICUS, GA., Dec. 27, 1888.—I have recently bought a fine bed of clay land in Americus, which has been examined by Dr. Morton, a geologist of Trenton, N. J., who says that it is as fine as he ever saw. The company will be a stock company, and will make brick, tile and sewer piping in large quantities. The Hamill Brick Co. will commence business about the 1st of March, 1889, with a \$20,000 capital, and will use the Sword brick machine and the latest improved machinery for tile and pipe. Would like to correspond with the manufacturers of the Sword brick machine and other companies making tile and sewer pipe machinery. A. J. HAMILL.

ENLARGING LUMBER MILLS.—VILLAGE MILLS, TEX., Dec. 25, 1888.—We are putting in a new and larger engine (old one 18x24, new one is 24x33), Filer & Stowell make, a new Garland trimmer, some new shafting, and a full complement of iron line rolls, lath saws, &c. Have built an additional shed, 59x100 feet, to mill building, and expect to increase our capacity from 55 M to about 75 M positively. Are now working on these improvements.

VILLAGE MILLS CO.

BIG LUMBER MILLS.—EDENTON, N. C., Dec. 24, 1888.—We organized a stock company on the 17th. Name, the Branning Manufacturing Co.; capital \$125,000, all paid up. We have just completed a saw and planing mill with 12 driers, all of a capacity of 75 M feet per day. We shall commence the erection after the 1st of January of another saw mill and driers of about 50 M feet a day, and are now figuring on a planing mill to dress the same.

J. W. BRANNING.

Pig Iron Production in the South in 1888.

The MANUFACTURERS' RECORD has secured special reports from the furnaces of the South, giving their production of pig iron for 1888, and hence we are to day enabled to give our readers this information not only in advance of any other publication, but several weeks earlier than the statistics of production for the year have ever before been given.

One year ago, in reviewing the iron trade of 1887, the MANUFACTURERS' RECORD said:

The Southern States do not, of course, show any great increase for 1887, for the reason often mentioned that the many new furnaces under construction during that year have not as yet, with one or two exceptions, gone into blast. These furnaces will not, as a general thing, be finished until about the middle of the year, and some not until near the end of 1888, but enough will go into blast to show a decided increase in Southern pig iron production during the latter half of the year. About the beginning of 1889 the South will be at work in earnest turning out iron. Now it is building furnaces; then it will be operating them.

These statements will explain why the great developments in Southern iron interests are not yet fully seen in the output of the Southern furnaces. During the latter part of 1888 a number of the new furnaces went into blast, but many are yet under construction. Among the furnaces which are so nearly completed that they can be counted upon to blow in by early spring are two at Baltimore of 250 tons daily capacity each; two at Anniston, 150 tons each, and several at Birmingham, Ensley City, Bessemer and Sheffield, and one in Wythe county, Va., 60 tons capacity, while a number of others are under active construction, with contracts closed, and others pending for new furnaces in Virginia, Alabama, Georgia and Texas.

From the reports to the MANUFACTURERS' RECORD from Southern furnaces we have compiled the production of iron by States. In some cases the furnace managers estimated their production for the last few days of the year, and the final reports, when received a few weeks later, may show a slight difference, but for all practical purposes the following statistics are sufficiently accurate to exhibit the production of Southern iron in 1888 as compared with former years:

	1888.	1887.	1886.	1885.
States.	Net tons, 2,000 lbs.	Net tons, 2,000 lbs.	Net tons, 2,000 lbs.	Net tons, 2,000 lbs.
Alabama.....	341,000	292,700	283,850	297,430
Tennessee.....	278,000	250,344	199,160	161,100
Virginia.....	217,000	175,715	158,250	163,780
W. Virginia.....	97,300	82,311	98,618	69,007
Georgia.....	39,800	40,947	46,490	32,924
Kentucky.....	66,000	41,907	34,844	37,553
Other States, partly esti'd.	26,000	45,450	35,952	30,930
	1,065,100	999,436	875,170	712,835

These figures show an increase of 136,000 tons in 1888 over 1887, 190,000 tons over 1886, and 353,000 tons over 1885. This is a very heavy gain, especially when it is remembered how few of the new furnaces have been at work until within the last month or so. It is still more remarkable when taken in connection

with a decrease in the whole country compared with 1887 of between 400,000 and 500,000 tons, as estimated by the American Iron & Steel Association. While the South increased its iron production in 1888 over 1887 by about 130,000 tons, the rest of the country shows a decline of probably upwards of 500,000 tons.

Nearly one-third of all the iron made in the South last year was made in Alabama, and the greatest increase during 1889 will be in that State.

PLANS are being matured for the founding of an industrial town on the James river somewhere near the Natural Bridge, Virginia, backed by immense capital. The enterprise has been planned on a gigantic scale, and there are rumors of developments which promise great things for the new city yet to be. The MANUFACTURERS' RECORD has heard of some of the remarkably liberal inducements offered for the location of cotton and iron industries, and certainly they are liberal enough to secure many extensive enterprises, especially as the natural advantages of the place will prove unusually attractive. Iron ore in abundance and to be delivered at very low cost, competitive transportation facilities, direct connection with the cotton fields by through lines and cheap transportation are some of the advantages. Capital in abundance, it is said, will be at the back of the company which proposes to build this town.

THE publishers of the book "Five Little Peppers and How They Grew," noticed on page 45, are Messrs. D. Lothrop & Co., of Boston, whose name was accidentally omitted from the notice.

NEW MANUFACTURING ENTERPRISES.—SALISBURY, MD., Dec. 19, 1888.—A canning factory is mooted, and our Board of Trade would offer inducements.

The Grieve Bros. are erecting at the depot a brass and iron foundry and machine shop.

Messrs. Mitchell & Murrell are erecting on the water front, opposite E. E. Jackson & Co.'s mill, a large sash, door and mill work factory.

The Parks Guano Co., now of Baltimore, have purchased 140 feet of wharf adjoining the Maryland Steamboat Co.'s wharf, and will erect a large factory in the spring.

The Wilmington (Del.) Basket & Crate Factory are prospecting and in negotiation for property preparatory to the removal of their plant.

JAMES E. ELLEGOOD,
Sec. Board of Trade.

STEVENS' POTTERY, GA., Dec. 23, 1888.—We will add full line of machinery for making and preparing clay to make a full line of stone, rock and yellow ware. We will want one plunger machine, one (40) leaf press pump and fixtures and one or two giggers; also a crusher or pulverizer to reduce pebbles in our sewer-pipe clay. We think it will take a wet pan to do this work, as we have tried several crushers and pugs and none of them get our clay pulverized to suit us. We will add two double-deck kilns at once.

STEVENS BROS. & Co.

Railroad Building in the South in 1888.

While the total railroad construction of the country for 1888 was but a little more than one-half as much as in 1887, yet the South fulfills the predictions of the MANUFACTURERS' RECORD that it would be the center of the greatest railroad activity during 1888, and shows up with a decrease of only 476 miles against a decrease of 6,000 for the whole country, and if we omit Texas, in which only 322 miles were built in 1888, against 1,055 in 1887, the South made an increase of 257 miles. A comparison of railroad construction in the South during the last three years is of interest:

	No. of miles of main track laid 1888.	1887.	1886.
Maryland.....	142	164	4
Virginia.....	174	184	168
North Carolina.....	221	104	115
South Carolina.....	452	231	138
Georgia.....	121	103	321
Florida.....	294	515	60
Alabama.....	64	99	149
Mississippi.....	60	65	23
Louisiana.....	185	68	26
Tennessee.....	353	168	18
Kentucky.....	51	153	36
Arkansas.....	312	1,055	543
Texas.....	53	53	104
Vest Virginia.....	53	53	104
Total.....	2,494	2,970	1,826
Total for whole country.....	7,120	13,000	9,000

These figures are strikingly forcible, as they show that in 1886 the South built 20 per cent. of the total new mileage of that year; in 1887 it had 23 per cent. and in 1888, 35 per cent. This is a remarkably strong showing, as it indicates how rapidly the South is gaining in railroad construction as compared with the rest of the country. Examining the figures for 1888, for which we are indebted to the Railway Age, of Chicago, as compared with 1887 and 1886, Virginia shows an increase of 78 miles over 1887, North Carolina a decrease of 10 miles, South Carolina an increase of 117 miles, Georgia an increase of 221 miles. Georgia leads the South this year, having built 452 miles of new road, while Kentucky, which was sixth in 1887, moved up to the second place in 1888, having built 353 miles, against 168 in 1887 and only 68 in 1886. In Alabama there was something of a lull after the very active building of 1887, the total for that State being 294 miles, against 515 in 1887, but in 1886 only 60 miles were built in Alabama. Texas shows a very heavy falling off, having built only 322 miles, against 1,053 in 1887.

The construction for the entire country was 7,120 miles in 1888, against 13,000 in 1887 and 9,000 in 1886.

WILL BUILD LARGER PLANING MILL.—ROANOKE, VA., Dec. 25, 1888.—We will build in January, 1889, a planing mill. We are, and have since 1887, conducting in a small way a planing mill and general retail and wholesale lumber business. Will move and erect a much larger and better building with increased facilities for business.

PATTERSON & WILMETH.

BRICK WORKS.—MARBLE FALLS, TEXAS, Dec. 20, 1888.—Charles Frost & Co. will, as soon as machine arrives, start brick-making here. Capacity of machine 20 M daily. Brick will be of good clay and pressed.

J. A. ANNALL.

Comparative Blast Furnace Capacity.

DANVILLE, PA., Dec. 24, 1888.

Editor Manufacturers' Record:

The following question taken from a private letter to your correspondent is but a sample of many received:

"To what cause do you attribute the fact that the daily product of modern blast furnaces in the South does not equal that of similar size and equipment in Pennsylvania?"

I presume the furnaces referred to in Pennsylvania are the Edgar Thompson, as they are generally given to show the maximum of modern furnace practice, having over 200 tons daily capacity, whilst the Southern furnaces, modeled largely from them, have not reached the 200 ton figure.

A percentage of this difference is to be attributed to difference in the quality of the ore and coke used.

Assuming this to be in the ratio of three to four, and the furnace product to be in the ratio of two to three, we still would have a difference of some 25 per cent. to be ascribed to some other cause.

The cause, I believe, lies in faulty furnace lines. I contend that if the blast furnaces are of the same cubical capacity and have equally good equipment, with furnace lines adapted to the peculiarities of the stock to be used, there should be no difference in daily product except that percentage referred to as arising from the difference in quality of stock.

The lines of the Northern furnaces referred to are the result of practical experience combined with scientific knowledge, and by the adoption of which the wonderful results have been attained.

Southern furnaces have been built without reference to the peculiarities of the stock. The theoretical lines have been adopted, or have been copied from existing furnaces in the North having fine records.

With furnace lines adapted practically to the stock peculiarities, I am convinced that 25 per cent. more iron will be produced by the modern blast furnaces of the South.

J. D. KASE.

NEW FLOUR MILLS.—BOWLING GREEN, KY., Dec. 29, 1888.—W. E. Damon, Bowling Green, Ky., Southern agent Richmond City Mill Works, has received contract of J. P. Griffin, John, Tenn., for 30 barrel roller mill on the short system. Mr. Griffin visited the mill at Liberty, Tenn., built by the above-named company, and was so well pleased that he contracted for a duplicate mill; will be completed February 1st. The Lynchburg Roller Mills, of Lynchburg, Tenn., has contracted for the erection of a 40-barrel roller mill. The mill will be put in running order by February 15, 1889. Mr. Damon has also contracted to furnish outfits of machinery to W. D. Gish & Co., Sacramento, Ky., who will build a 40-barrel roller mill on Mawhood's improved system, to be in running order by the middle of February, and L. Dudderas & Bros., Gilbert's Creek, Ky., who will build a 40-barrel roller flour mill. Messrs. Dudderas Bros. visited the mill of O. C. Vanarsdahl at Hustonville, built by these parties, as well as two mills by two other firms, with the above result.

W. E. D.

ELECTRIC LIGHT PLANT.—MONROE, LA., Dec. 28, 1888.—A number of capitalists have organized a stock company under the name of the Monroe Electric Light & Power Co., with a capital of \$25,000, and have contracted to light the city for three years, the lights to be in operation February 15, 1889. They will also furnish lights for public and private use. They have adopted the Van Depoele system.

I

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Bagging Machinery.—J. H. Williamson, Loachapoka, Ala., wants information as to cost of machinery for a factory for manufacturing pine fibre bagging, and where it can be purchased. Also information as to where the Clement attachment can be purchased, and cost of same.

Blowing Engine, Boilers, &c.—The Warner Iron Co., Goodrich, Tenn., want to purchase at once a blowing engine, new hoist rig, boilers, &c.

Boiler Feeder, Pump, &c.—The Newnan Cotton Mills, Newnan, Ga., want to purchase a boiler feeder for 200 horse-power boiler, fire-pump for 5,000-spindle mill, automatic sprinklers and steam-heating apparatus to use exhaust steam.

Brick Machinery.—A. J. Hamil, Americus, Ga., wants to correspond with the manufacturers of the sword brick machine.

Dams and Dikes.—William E. Merrill, lieutenant-colonel of engineers, Cincinnati, O., will receive until January 30 proposals, in duplicate, for furnishing material and constructing dams and dikes in the Ohio river, to wit: a dam between Davis and Neville islands, a dam at head of Marietta island, a dike at Eight Mile island, a dike at Bonanza bar, a dike at Madison, Ind., and a dike at Caseyville, Ky.

Electric Light Plant.—The Warner Iron Co., Goodrich, Tenn., want to purchase machinery for an electric light plant at once.

Engine.—A. J. Livick, Staunton, Va., wants to purchase a good second-hand engine, 12 or 15 horse-power, mounted on boiler.

Grinding Mill.—Snooks Bros., Utica, Md., want to purchase a small mill to crush and grind corn. Second-hand is preferred. Must not require more than 6 horse-power.

Ice Machinery.—The Pulaski Ice Co., Pulaski, Tenn., want bids on machinery for their factory. Address J. H. Lightfoot, secretary and treasurer.

Iron Roofing and Trusses.—The Boyden Power Brake Co., Baltimore, Md., want the address of manufacturers of iron roofing and trusses.

Locomotive.—A small locomotive is wanted at once by the Warner Iron Co., Goodrich, Tenn.

Match Machinery.—A. F. C. Cramer, Charleston, S. C., wants information in regard to machinery for a match factory.

Pin Machinery.—C. H. Prince, Florence, Ala., wants information as to cost of machinery for manufacturing pins, and where same can be purchased.

Pump.—Arnall & Farmers, Newnan, Ga., want to purchase a power pump, to be run by a belt, for fire protection.

Spoke and Hub Machinery.—A. P. Hand, Shubuta, Miss., wants to purchase machinery for a spoke and hub factory. Good second-hand machinery will do.

Tile and Sewer-pipe Machinery.—A. J. Hamil, Americus, Ga., wants to purchase tile and sewer-pipe machinery.

Well Pump.—Hartselle, Ala., wants to purchase a deep well pump. Address D. W. Day, secretary city council.

To Build Barrel Factory.—CHARLESTON, S. C., Dec. 31, 1888.—We have determined to build a barrel factory at Macon, Ga.

COTTON MILLS.—NEWAN, GA., Dec. 28, 1888.—The Wilcoxon Manufacturing Co. has been bought by Arnall & Farmers, enterprising merchants of this place. They want a power pump, run by belt, for fire protection. Will probably add new machinery for yarns in the summer.

Newnan Cotton Mills have their engine and boilers in place. The boilers were furnished by R. D. Cole Manufacturing Co., of Newnan. The cotton mills want to buy a boiler feeder for 200 horse-power boiler, a fire-pump for 5,000-spindle mill, automatic sprinklers and steam-heating apparatus, for which they want to use exhaust steam. They expect to begin work in March, and want to secure a capable superintendent. R. D. Cole, Sr., president, can give particulars. F. B. COLW.

ADDITIONAL MACHINERY.—RICHMOND, VA., Dec. 27, 1888.—We have recently purchased a number of new machines especially adapted for locomotive building, and hope in the near future to have them in, and prepared to make early deliveries of machines equal to any made. We are much encouraged by the favorable comments on those we have turned out, and we shall aim to put our establishment alongside of our most favored competitors.

RICHMOND LOCO. & MACHINE WORKS.

TO MANUFACTURE FURNITURE.—IRONDALE, ALA., Dec. 25, 1888.—The Irondale Manufacturing Co. was organized on 23d with T. S. McDaniel as president and general manager, and D. E. Jones, superintendent; T. H. Thomas, treasurer; Mr. Gamons, secretary. The directors have decided to commence work the first of January. The business will be the manufacture of furniture, coffins, boxes and building material. T. S. McDANIEL.

BASKET AND WOODENWARE FACTORY.—CHATTANOOGA, TENN., Dec. 29, 1888.—We will start a plant for the manufacture of baskets of all kinds and wooden butter dishes. We will employ about 200 hands: Will start about the 1st of February, using our own improved machinery. Will also make all kinds of fruit packages.

CHAT. BASKET & PACKAGE CO.

WOOL SCOURING MILL TO BE STARTED.—GALVESTON, TEXAS, Dec. 27, 1888.—Mr. Theo. Howard, of New York, contemplates building a wool scouring mill. He is at present in the East selecting machinery. B. ADOUR.

COTTON FACTORY PROJECTED.—SHEMVEPORT, LA., Dec. 26, 1888.—We propose to build a \$100,000 cotton factory and are meeting with much encouragement. Have not organized yet, but think we will soon. R. T. COLE.

TO BUILD RAILROAD.—SAN AUGUSTINE, TEXAS, Dec. 24, 1888.—Work will commence the 1st of January, 1889, on the Red River, San Augustine & Western Railroad. Charter filed and the amount of money paid as required by law. Capital stock is \$300,000. I. H. HOLLIS, Secy.

ERECTING CANNING FACTORY AND SAW MILL.—GREENSBORO, N. C., Dec. 26, 1888.—I have commenced to put up a canning factory and saw mill.

WM. C. SATTERFIELD.

STREET RAILROAD TO BE BUILT.—MARIETTA, GA., Dec. 27, 1888.—A charter for building street railway from two miles south of Marietta to Kennesaw mountain, five miles, was secured from the late Georgia legislature by Marietta parties. The work will be commenced in the early spring. A. Armstrong, Box 33, Marietta, can give particulars.

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Boiler Plate and Tank Iron, Lap-Welded Pipe and Boiler Tubes, Boiler and Sheet Iron Rivets, Steam Brass Goods and Engine Trimmings, Iron Valves and Fittings, Pipe Workers' and Machinists' Tools, Wood and Iron Pulleys, Belting, Hose and Packing, SEWER PIPE, FIRE BRICK and CLAY.

405 and 407 Elm Street,

Dallas, Texas.

TO START BRICK WORKS.—HENRIETTA, TEXAS, Dec. 25, 1888.—I am making every preparation to manufacture brick quite extensively, as the demand for building material will be brisk here in the spring. An improvement company just organized here with a capital of \$100,000. They are contemplating two or three enterprises here in the spring. W. A. SQUIRES.

C. R. MAKEPEACE & CO.
ARCHITECTS and MECHANICAL ENGINEERS
PROVIDENCE, R. I. Plans, Specifications and Estimates furnished for Cotton and Woolen Mills.

LOCKWOOD, GREENE & CO.

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VULCAN IRON WORKS, Chicago.**
Send for our new catalogue.

PROPOSALS.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until a o'clock P. M. on the 10th day of January, 1889, for the labor and materials required in the erection and completion of the general and trench excavation, concrete foundation, basement and area walls of the Court-house, Postoffice, &c., at Detroit, Michigan, in accordance with the specification and drawings, copies of which may be seen at this office, the office of the Superintendent, Builders' and Traders' Exchange, Chicago, Ill., Louisville, Ky., Builders' Association Exchange, Buffalo, N. Y., Builders' Exchange, Cincinnati, Ohio, Indianapolis, Ind., and Detroit, Mich., Builders' and Dealers' Exchange, Cleveland, Ohio. The Supervising Architect will furnish a limited number of copies of the specification and drawings at three dollars a set upon receipt of that sum in postoffice money order drawn to the order of the Treasurer of the United States. Each bid must be accompanied by a certified check for \$500.

WILL A. FRERET,

December 26, 1888. Supervising Architect.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until a o'clock P. M. on the 15th day of January, 1889, for the labor and materials required in the erection and completion of the excavation, and pile and concrete foundations of the U. S. Postoffice, Courthouse, &c., building at Charleston, S. C., in accordance with the specification and drawings, copies of which may be seen at this office, the office of the Superintendent, Builders' and Traders' Exchange, Charleston, S. C., Builders' Exchange, Baltimore, Md., Mechanics', Dealers' and Lumbermen's Exchange, New Orleans, La., Master Builders' Exchange, Philadelphia, Pa., Virginia Mechanics' Institute, Richmond, Va., and Builders' and Traders' Exchange, Louisville, Ky. Each bid must be accompanied by a certified check for \$100. The Supervising Architect will furnish a limited number of copies of the specification and drawings at one dollar a set upon receipt of that sum in postoffice money order, drawn to the order of the Treasurer of the United States. WILL A. FRERET,

December 27, 1888. Supervising Architect.

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Issue Commercial and Travelers' Letters of Credit.

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BALTIMORE, Jan. 2, 1889.

Sterling.—Weak.		Commercial.	
Selling.		60 days....	4 1/2% to 4 3/4%
3 days.....	4 1/2% to 4 3/4%	3 days.....	—
Francs.—		Commercial.	
Selling.		60 days....	5 1/2% to 5 3/4%
3 days.....	5 1/2% to 5 3/4%	3 days.....	—
Reichmarks.—		Commercial.	
Selling.		60 days....	9 1/2% to 9 3/4%
3 days.....	9 1/2% to 9 3/4%	3 days.....	—
Guilvers.—		Commercial.	
Selling.		60 days....	3 1/2% to 3 3/4%
3 days.....	3 1/2% to 3 3/4%	3 days.....	—

Baltimore Stock Exchange Quotations.

Reported by ALEXANDER BROWN & SONS, Bankers, Baltimore.

BALTIMORE, Jan. 2, 1889.

	BD.	ASKED.
Virginia Canal Coupons, N F.....	26	26
N. Carolina 4's.....	8 1/2%	8 1/2%
Charlotte, Col. & Aug.....	45	45
W. Col. & Aug.....	100	100
Va. & Tenn. 5's.....	107	107
Wilmington & Weldon 5's.....	110 1/2%	110 1/2%
Atlanta & Char. 1st, 7's.....	118 1/2%	118 1/2%
Atlanta & Char., income, 6's.....	100	100
Col. & Green. 1st, 6's.....	102	102
Col. & Green. 2d, 6's.....	10 1/2%	10 1/2%
Va. Midland, 1st, 6's.....	113 1/2%	113 1/2%
Va. Midland, 2d, 6's.....	113 1/2%	113 1/2%
Va. Midland, 3d, 6's.....	106 1/2%	106 1/2%
Va. Midland, 4th, 5's.....	97 1/2%	97 1/2%
Chas. C. & Aug. 4th, 5's.....	113	113
Ge. Pacific 1st, 6's.....	107	107
Cape Fear & V. Valley 6's.....	97 1/2%	97 1/2%

Subscribe to the MANUFACTURERS' RECORD.
Price \$4.00 a year or six months for \$2.00.

WILL IMPROVE FURNACE AND ALCOHOL PLANT—GOODRICH, TENN., Dec. 27, 1888.—The Warner Iron Co. has purchased the Standard Charcoal Co. property, and will at once put furnace and alcohol works in running order. Will be on the market at once for blowing engine, new hoist rig, electric light plant, small locomotives, boilers, &c. **WARNER IRON CO.**

SAW MILLS.—TALLAPOOSA, GA., Dec. 22, 1888.—We have first story of our saw mill up and have all the machinery for same here—engine and boiler set—but have been investigating the feasibility of putting in a band mill to cut yellow pine instead of the circular we have. We want information, prices, &c., in regard to band mill of about 15 M feet per 10 hour capacity. James Lichtenwaite, Hoopes, Ga., contemplates changing his mill to a band mill. He wants information and prices of band mill machinery (no carriage wanted). **POOSA MFG. CO.**

WAGON FACTORY.—LOUISVILLE, KY., Dec. 28, 1888.—We have opened a factory for Runabout wagons. Our output will be governed by the prospects of trade later. We have a capacity at present for 1,000 vehicles per year. **GARDINER & CROSS.**

TO BUILD LARGE STOCK-YARDS.—FORT WORTH, TEXAS, Dec. 29, 1888.—Have just organized Union Stock-yards Co., with capital stock of \$200,000. Have bought 150 acres of land for that purpose. Have got plenty of money, and everything is on a solid basis. **A. W. CORNELL, Secy.**

TO BUILD STREET RAILROAD.—JEFFERSON, TEXAS, Dec. 28, 1888.—The Lone Star Street Railway Co. has been organized here, and will build about three miles of road during the year 1889. The system as laid out is about nine miles in length. W. S. Haywood is president, and Douglass C. Wise, secretary. **W. S. HAYWOOD.**

TO MANUFACTURE POTTERY, TILE, &c.—WACO, KY., Dec. 28, 1888.—The Waco Mining & Manufacturing Co. was organized with a capital of \$300,000 to manufacture pottery, tiling, glass and salt. **C. L. SEARCY, Sec.**

TO ERECT SPOKE AND HUB FACTORY.—SHUBUTA, MISS., Dec. 29, 1888.—I am getting ready to erect spoke and hub factory at this place. Will want to purchase necessary machinery. Would like to hear from parties who may have good second-hand machinery. **A. P. HAND.**

IMPROVING ICE FACTORY.—RALEIGH, N. C., Dec. 31, 1888.—We are putting in an 80 horse-power engine (new Harris-Corliss), new condensing pipes, new freezing pipes and general repairing. Capacity when completed will be 15 tons ice per day. **PHILIP H. ANDREWS & Co.**

LARGE PURCHASE OF TIMBER LANDS.—CHICAGO, ILL., Dec. 29, 1888.—I have purchased with A. A. Carpenter jointly 75,000,000 feet of pine in Calcasieu parish, La., where we had already five times that quantity. **A. G. VAN SCHAICK.**

OPENING STONE QUARRY.—ALDERSON, W. VA., Dec. 26, 1888.—I am opening a quarry of as handsome and good working brownstone as can be found anywhere. **W. G. HUDGIN.**

TO OPEN COAL MINES.—BIRMINGHAM, ALA., Dec. 31, 1888.—We have been carrying on a coal business under the name of Bradfield, Houston & Co., and have formed a stock company out of the old firm. We are mines' agents for several large mines, and it is also our intention to open up some mines in the spring. **L. T. BRADFIELD.**

THE CROWDUS Electric Fare Box.

The only perfect light at night. Simplest in construction. Easiest to clean. Registers each fare. Increases earnings. Exposes frauds. The smallest and neatest. Write for catalogue "B."

**Electric Fare Box Co.
NASHVILLE, TENN.**

Calendars.

THE 1889 calendar of N. W. Caldwell, Chicago, inventor of the Caldwell conveyor and dealer in mill and elevator supplies, is on a large colored lithograph, in the center of which is the figure of a child with its arms full of flowers.

MESSRS ROGERS, BROWN & CO., dealers in pig iron, Cincinnati, are on hand, as usual, with their handsome and convenient calendar. This time they have even improved on former efforts, and the calendar for 1889 is a more attractive one than any of its predecessors.

THE lover of yachts and yachting will "hail with delight" the calendar for 1889 sent out by the Ashton Valve Co., Boston. On a large card is a beautifully lithographed representation of a yacht race. Two large sloop yachts are running before the wind, sheets lifted, spinnakers set and everything drawing. There is one objection to this calendar, however. Every time one looks to see the day of the month his eye is caught and held by the picture. There is no telling how much time during the year a man will lose in this way.

MESSRS. MERCHANT & CO., Philadelphia, have issued an 1889 calendar that is a work of art. The articles in which the firm deal are all shown, and the representations are arranged with taste and an astonishing exhibition of skill in the utilization of space. The roofing plates, for which this firm is so widely known, their sheet brass and copper, Babbitt metal, brass and copper wire and rods and other metals are all shown, and in such a way as to make an exceedingly attractive picture. The calendar will be an ornament to any office.

St. Louis Iron Market.

Special report by ROGERS, BROWN & CO., Gay Building, 204 N. 3rd street, St. Louis. W. H. SHIELDS, Manager.

St. Louis, Dec. 31, 1888.

Rather more activity has been noticed in the market than is usually expected at this season. A number of sizable orders have been closed since last report, covering different kinds of iron. The different branches of the iron industry are looking for a successful season. Southern irons are a little lower. Lake Superior brands are firm and a shade higher. Good car wheel irons generally are scarce. Old wheels are in good demand. We quote for cash f. o. b. St. Louis:

HOT BL. ST. ROUNDER.	
Southern Coke, No. 1.....	\$26 75@27 75
" " No. 2.....	26 00@27 00
" " No. 3.....	25 50@26 50
" Charcoal, No. 1.....	28 00@29 00
" " No. 2.....	27 50@28 50
Missouri No. 1.....	27 50@28 50
Missouri No. 2.....	27 00@28 00
Oato Softeners.....	27 00@28 00
FORGE.	
Mottled.....	24 00@25 50
Missouri.....	25 50@26 50
CAR-WHEEL AND MALLEABLE IRON.	
Lake Superior.....	30 00@33 00
Southern.....	29 00@34 00
Cannelville Coke, (East St. Louis).....	4 70 1/2—
" (St. Louis).....	4 85—

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the **MANUFACTURERS' RECORD**. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

Valuable Pine Lands for Sale.

10,000 ACRES OF PINE LANDS, in Baldwin and Covington counties, Alabama, a large portion of which is virgin pine forest. Apply to **LOUIS LOWE STEIN**, Administrator of Estate HENRY WATSON, or **S. T. PRICE**, Attorney, MOBILE, ALA.

FOR SALE.

320 Acres of Land,

upon which a WELL DEFINED VEIN OF MANGANESE has been exposed, located four miles from the IRON MOUNTAINS and DIRECTLY ON THE LINE OF THE MEMPHIS AND INDIAN TERRITORY R. R., now in course of construction.

**ROBT. W. WORTHEN,
LITTLE ROCK, ARK.**

FOR SALE.

I own **15,000 ACRES** of the celebrated

Elkhorn, Ky., Coal Lands,

that I will sell, containing four veins of Coking Coal from 4 to 11 feet above water, one of Splint and one of Cannel; assay much BETTER THAN CONNELLSVILLE, PA. Also,

3,610 Acres of Iron Lands,

in Rockbridge county, Va., two miles from railroad. This property has the **FINEST CAR-WHEEL IRON** in the State and in immense quantities.

E. B. MOON, Bristol, Tenn.

Timber Lands

LARGE AND SMALL TRACTS OF Yellow Pine, Hardwoods, Cypress; also choice White Oak;

LOCATED IN

Virginia, North Carolina, Tennessee, West Virginia, Alabama, Mississippi, Texas, Louisiana, Florida, Arkansas.

ALSO

Coal AND Iron Ore Lands.

Correspondence solicited from responsible people.

W. H. HOWCOTT,

**194 Common Street,
NEW ORLEANS, LA.**

Cable Address: "HOWCOTT."



ENTIRELY NEW. HOME-LIKE. ELEGANT.
HIGHEST ELEVATION ON HANDSOMEST STREET
American Plan, \$3.00 to \$4.50 per day.
Telegraph for Rooms at our expense.
C. WARNER STORK, Proprietor.

If you wish to keep posted on the progress of the South, read the **MANUFACTURERS' RECORD**. Price \$4.00 a year.



Joyce, Cridland & Co.

DAYTON, O.

MANUFACTURERS OF

J. O. Joyce's Pat. Lever Jacks

Compound Lever

AND SCREW JACKS,

And Bench Vises.

50 varieties of Lever and Screw

Jacks for railroad use.

Please send for illustr. catalogue.

L. T. CHILES, J. O. MILLER, LEWIS AFFERSON,
President, V.-Pres., Secy. & Treas.

Pineville Land & Lumber Co.

Capital Stock, \$400,000.00.

Principal office, Mt. Sterling, Ky.; branch office Pineville, Ky., and Louisville, Ky.

The Company has for sale several hundred choice

lots for Manufacturing, Mercantile

or Residential Purposes,

situate on the railroad front in the WEST END

OF PINEVILLE.

Correspondence solicited. Address, LEWIS

APFERSON, Secretary, Mt. Sterling, Kentucky, or T.

C. H. VANCE, Manager, 5th and Main Streets,

Louisville, Ky.

Timber and Mineral Lands IN THE SOUTH

FOR SALE BY

NELSON, WILLIAMS & CO.

Real Estate Brokers and Investors

NASHVILLE, TENN.

5,000 acres Virgin Poplar and Oak Timber Land

near new railroad at a bargain. 25,000 acres fine

timber on good stream. Others of from 1,000 to

60,000 acres Timber and Mineral Lands inspected

and reported. Correspondence invited. Reference,

any bank or business house in Nashville.

Capital - \$100,000.

Ex Gov. John C. Brown.....President

Jere Baxter.....Vice Pres't and Gen'l Mgr'r

J. H. Moore.....Vice President

T. P. P. Allison.....Vice President

Lewis T. Baxter.....Secretary and Treasurer

Mineral and Timber Lands in the

Southern States Bought and

Sold on Commission.

Agencies in New York, Chicago, Boston

and London.

We call the attention of owners of large

tracts of land to the unusual advantages offered

by this Company. Address

LEWIS T. BAXTER,

Secretary and Treasurer,

Nashville, Tenn.

References: The bankers and business men

of Nashville, Tenn.

MEMPHIS Land & Timber Co.

No. 10 Madison Street,

MEMPHIS, TENN.

OFFERS FOR SALE

250,000

ACRES OF

Timber & Agricultural

LANDS

In the Counties of Clay, Greene, Craig-

head, Poinsett, Mississippi, Cross, St.

Francis, Crittenden, Woodruff and Mon-

roe, in the State of

ARKANSAS,

in bodies to suit purchasers. Prices very

reasonable. Correspondence invited.

**HOWSON & HOWSON
PATENTS.**

Solicitors and Counsellors at Law,
Philadelphia, 119 S. Fourth Street,
New York, 38 Park Row,
Washington, 915 F Street.

3 New Marine Steel Boilers,
ONE HUNDRED AND FIFTY HORSE-
POWER EACH; CAN BE USED TO-
GETHER IN ONE BATTERY OR SEPA-
RATELY; NOW STORED AT APALACHI-
COLA, FLA. For terms, address

The FILER & STOWELL COMPANY,
MILWAUKEE, WIS.

GRIST MILLS FOR SALE.

One run 48-inch French Buhr stone, with new runner
and all parts complete; two run 36-inch French Buhr
stone, and all parts complete; one Flour Packer and
one Mixer. Apply to SLATER MILL & POWER
CO., Geo. E. Barstow, treasurer, Providence, R. I.

COAL and IRON

Properties located in the best fields of
Alabama and Tennessee FOR SALE.
Finest timber tracts in the South and
West. Data furnished. Ask for what
you need. CLARKE & BIBB,
BANKERS AND BROKERS,
18 Broadway, New York.

PORTLAND CEMENT.

German and English Brands of
Best Quality.

Send for tests and all particulars to
ERSKINE W. FISHER,
WELLES BUILDING, No. 18 Broadway, NEW YORK.

JUST PUBLISHED
Tables of Analyses
OF CLAYS, Etc.

Showing the composition of all the principal clays
in Europe and America, embracing Fire Clays,
Pottery Clay, &c., &c., a book for all inter-
ested in clays and their products. Compiled
and arranged by Alfred Crossley. Price, One
Dollar. Postage Paid.

Extracts from the Author's Preface.—Every clay
owner should know all about his clay if it is of any
value, and one of the first steps to a full and correct
knowledge of clay is to have it subjected to a chemical
analysis. But it is not enough for a man to know
his own clay, he should also acquaint himself with
the properties of other clays, and in fact, by this very
knowledge of others he will be the better able to
judge of the value or otherwise of his own. This
little book is intended in an humble way to supply
that knowledge. In it will be found the analysis of
the best-known and most-celebrated clays of the Old
and New World, with many others of lesser note, but
in some cases of equal quality. * * * To each
analysis, as far as known, I have appended a remark
as to the character of the goods actually made from
it. This, I apprehend, may be useful as affording a
clue to what line of manufacture other clays of like
character may be very properly applied. * * *
To make the book more useful to the practical man, I
have added some blank space at the end, ruled and
headed, so that parties can fill in the analysis of their
own clay and any others in which they may be inter-
ested. Published by T. A. Randall & Co., "Clay-
worker" Office, Indianapolis, Ind. Sent post-paid on
receipt of price by the Author.

A. CROSSLEY, Ironton, Ohio.

A RARE OPPORTUNITY!
FOR SALE OR LEASE.

The property known as East Mississippi Cotton Mills, located two miles from the
GROWING CITY OF MERIDIAN, MISSISSIPPI.

Two Buildings, each 50x100, two story One 100 horse power Engine. 2,500
Spindles. 50 Looms. Everything in complete order, now in full operation. Houses
for superintendent and operatives, together with 800 acres of land. Cheap fuel;
plenty of water for all purposes. Sufficient sample or loose cotton can be purchased
in the local market at reduced price to run the mill all the time, besides a saving in
bagging and ties. Sold or leased with or without land. This property is placed upon
the market because the owner being largely engaged in other business has not the
time to attend to it. For further particulars, address

C. W. GALLAGHER & CO., P. O. BOX 413, MERIDIAN, MISS.

FOR SALE!

One 18"x46" CORLISS ENGINE, good as new.
One 12"x30" CORLISS ENGINE, entirely new and now being built.

WE MAKE A SPECIALTY OF CORLISS ENGINES.

Send for Estimates to

REMINGTON MACHINE CO.

Wilmington, Del.

GEORGE PLACE,

Established 1855.
Late the George Place Machinery Co.
Equipment of Railway and Car Works,
EQUITABLE BUILDING,
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STEEL RAILS

COMPLETE OUT-FIT FOR
Logging, Mining and Plantation

RAIL AND TRAM ROADS.

Light Sections Rails and Spikes in stock.
Locomotives, Logging Cars, etc.
NEW AND SECOND HAND.

HUMPHREYS & SAYCE,
10 WALL ST., NEW YORK.

FOR SALE.**Railway Equipment.**

Locomotives for Freight, Passenger, Con-
struction, Logging and Motor Service, of
all weights, sizes and patterns, in excellent
condition and for prompt delivery, Standard
and Narrow Gauge. Passenger and Freight
Equipment, Standard and Narrow Gauge, in
great variety. All the above on terms to suit.

New York Equipment Company,
10 Wall Street, New York City.

FOR SALE!

- 3 Ingersoll Compressors, class "A."
- 2 Rand Compressors, duplex.
- 35 Ingersoll Drills.
- 10 Rand Drills.
- 100 38" gauge Dump Cars, 2 1/2 yards.
- 100 36" gauge Dump Cars, 1 1/2 to 2 1/2 yards.
- 4 Locomotives, 36" and 38" gauge.
- 10 Worthington Pumps.
- 2 Centrifugal Pumps.
- 2 Root Rotary Blowers.
- 5 Steam Shovels.

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52 BROADWAY, NEW YORK.

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SAN ANTONIO, TEXAS.

Makes the Litigation of Land Titles a
specialty. Will also Lend Money for non-
residents upon the best real estate security.



Seneca Falls Mfg. Co. 442 Water St., Seneca Falls, N.Y.

FOR SALE

At a Bargain.
A No. 4

Hoyt Bros. Double Surfacers.

Address J. MICHEL,
61 Fort St. East, Detroit, Mich.

Cotton Mill Machinery, and Yarn

FOR SALE.
16 Crompton Looms, 300 Loom Beams, 2 Ball-
ers, 1 Cloth Inspecting Machine, 2 Swift Spoil-
ers, 4 Beels, 7 Copping Machines, 8 Beaming
Machines, Winding Machine, Lot of Colored
Yarn. Apply to

J. H. and J. CHACE,
17 Exchange street, Providence, R. I.

Cotton and Woolen

MACHINERY.
50 Crompton Fancy Cotton Looms, nearly
new, 36 inch reed space, for 12 Harnesses,
4 boxes at one end, 1 at the other.

My Store Houses here have over 2 ACRES of
floorspace, which is covered with good ma-
chinery, including nearly full systems for Cot-
ton and Woolen Mills.

■ JEREMIAH CLARK, ■
Lowell, Mass. Office, 63 Dutton St.

Second-Hand Machinery.

IRON PLANERS.
24 ft. 48x42 in.; 23 ft. 42x36 in.; 22 ft. 36x34 in.;
5 ft. 24x20 in.; 3 ft. 19x16 in.

ENGINE LATHES.
15 ft. bed, 30 in.; 16 ft. 26 in.; 10 ft. 26 in.; 9 ft. 26 in.;
10 in.; 8 1/2 ft. 19 in.; 8 ft. 17 in.; 8 ft. 15 in.; 6 ft. 15 in.;
5 ft. 16 in.; 5 ft. 14 in.; 6 ft. 14 in.; 6 ft. 12 in.

DRILLING MACHINES.
36 in. B. G. self feed; 28 in. ditto; 20 in. B. G. hand
feed; four 20 in. plain ditto. 1 1/4 in. Freehand Slot-
ter, automatic feed; 1 Justice Hammer.
One 15 in., one 10 in. Shaping Machines.
One 2 in. Seamless Pipe Cutting Machine.
One 1 in. Bolt Cutter.
Send for lists second-hand tools.

NEW YORK MACHINERY DEPOT,
Bridge Store, No. 16, on Frankfort Street, New York.

BARAINS!

Second-Hand Machinery, Good as New.
MACHINERY DEPOT.

- 437, 439 & 441 N. Third St., Philadelphia, Pa.
- 2 to 100 horse-power Vertical and Horizontal Engines.
- 2 to 80 horse-power Vertical and Horizontal Boilers.
- 1 200 horse-power Horizontal Engine, cylinder 18x24"
- 1 40 H. P. Wetherill Corliss Engine, cyl., 12x24"
- 1 30 horse-power Copeland & Bacon Hoisting Engine.
- 1 20 horse-power Stokes & Parish Elevator Engine.
- 1 20 H. P. Frick Portable Engine and Boiler.
- 1 6 horse-power Hoisting Engine.
- 1 Shopley Portable Engines and Boilers, 5 and 8 H. P.
- 1 15 H. P. Return Tubular Boilers, 48"x12'.
- 1 20"x10' Engine Lathe.
- 1 24"x10' Blaisdell Lathe.
- 10 Screw Cutting Lathes, 10 to 18" swings.
- 1 24" Skenk Planer, Matcher and Moulder.
- 13 Drill Presses, from 25" to 10" swing.
- 5 Muley Saw Mills, complete.
- 6 Surface Planers, all sizes.
- 1 12 Jointer, a Mortising and a Tenoning Machines.
- Large assortment of Iron and Wood-Working Machy.

Please write for Prices.

Second-hand Machinery in Good Order.

FOR SALE CHEAP.
Engine Lathes—34 in. x 20 ft.; 26 in. x 14 ft.; 24 in.
x 12 ft.; 1 each 24 in. x 20 in. and 24 ft.; 24 in. x 20
ft. bed, Fifield; 24 in. x 15 and 16 ft.; 28 in. x 20 ft.;
20 in. x 10 and 12 ft.; 18 in. x 10 ft.; 20 in. x 20 ft.; 20
in. x 12 ft.; 1 each 16 in. x 6, 8 and 10 ft.; 6 each 24
in. x 6 ft.; 1 12 in. x 3 ft.; 4 each 15 in. x 6 ft.; 2 each
11 in. x 4 ft. and 5 ft.; 1 10 in. x 3 1/2 ft., foot power.

1 Brass Turret Lathe.
1 each Planer, 24 in. x 24 in. x 5 and 8 ft.
1 " 30 in. x 30 in. x 8 ft.
1 Planer, 36 in. x 30 in. x 7 ft.
1 " 40 in. x 40 in. x 14 ft.
1 Screw Planer, 28 in. x 3 ft.
1 Shaper, 6-in. stroke. 1 12-in. Shaper, two tables.
1 " each 12, 15, 20 and 28 in. stroke.

1 24-in. Hendey Shaper.
1 Crank Planer, 6 Lincoln Pat. No. 2 Millers.
1 each 3 and 6 Spindle Gang Drill.
1 each Nos. 1 and 2 Screw Machines. Wire Feed
Pratt & Whitney. Good as new.

1 375-lb. Drop Hammer. Beecher & Peck.
1 400-lb. Merrill Drop Hammer.
1 each 40 & 60 lb. Vertical Hammers.
1 No. 55 Ferracute Press. 1 Nut-Facing Machine.
1 No. 3 Stiles Ceased Press.

10 Foot Presses, assorted. 8 Power Presses, assorted.
12 Punching and Shearing Machines, assorted.
1 Return Tubular Boilers, 35 H.-P.
1 National Bolt Cutter, sizes, 1/4 in. to 1 in.
1 Bolt Cutter, 1/4 in. to 1 1/4 in. Good order. A J
head. Merriman.

1 Bolt Cutter, 1/4 in. to 1 in. Adj. head. Sellers.
1 each Nos. 2 & 3 Garvin Hand Millers. Good as new.
1 Horizontal Engine each 25 and 45 H.-P.
1 each 4 and 8 H. P. Portable Engines.

1 2-Spindle Profiling Machine.
1 Horizontal Boring Machine, 36 in. x 6 ft.
1 13-inch Slotter.
1 Power Mortising Machine.

Also full line of New Machinery.
New York Agency TAYLOR MFG. CO., Engines,
Boilers, &c. Correspondence solicited.

PRENTISS TOOL AND SUPPLY CO.,
P. O. Box 395. No. 45 Dry St., New York City.

The Wood Cotton Gin.

For Ginning Sea Island and other
Long Staple varieties.

It does the work rapidly and without break-
ing the staple. We back our recommendations
with a warrantee.

JOHN HEATHCOTE,

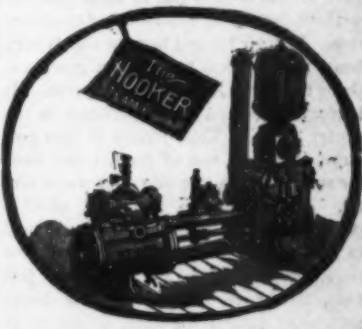
Sole Manufacturer,
Corner Eddy and Friendship Streets,
PROVIDENCE, R. I.
Send for Descriptive Circular.

HILLARD & GOLDSMITH PATENT.

The only successful machine in the world for pick-
ing threads out of spinners' waste.

Best Steam Pumps

FOR EVERY SERVICE.



The Hooker-Celville Steam Pump Co.

1101 N. 2d STREET,
Send for Catalogue. **ST. LOUIS, MO.**

The WELLINGTON BELT HOLDER.

LATLY IMPROVED.

Just the thing to shift large
bolts driving
Dynamoes, Mo-
tors, Gens, Saws,
&c. Belt stops
when machine
stops. These
stands in use, cost
very low. Sent
on trial. Promise
us to quote you
prices.

W. R. SANTLEY & CO. Wellington, Ohio.

WORSWICK MFG. CO.

CLEVELAND, OHIO.

Manufacturers of

Malleable and Cast Iron Fittings

AND BRASS GOODS,
Jobbers of Plumbers', Gas and Steam
Fitters' Tools and Supplies.

Agents for Iron Pipe and Boiler Tubes. Send
for Catalogue.

The "America" Flooring Machine.

The "America" plainer and matcher, made by Messrs. E. & B. Holmes, Buffalo, N. Y., has recently undergone some important changes, which add to the effectiveness of this already popular machine. One of its distinctive features is its patent journal box, by which the annoyance of "hot boxes" may be entirely avoided. This box differs from others in several important features. It is claimed by the manu-

facturers that the caps of boxes, instead of being made as light as possible, should have all the weight put in them possible without destroying symmetry of construction. In their journal box the cap is very heavy; the pocket to hold the grease extends the whole length of the journal. It is very deep, and has a partition in the center of it. This divides it into two large chambers, one of them being used for suet or tallow, the other for waste and oil. Either chamber will hold about a pound of suet or tallow. The box is held in place by heavy cap screws and steel dogs, provided with set screws and jam nuts, the broad bearing surfaces being accurately planed together, as shown in cut. There is no wood or other hard substance between the boxes, candle-wicking being substituted to prevent the oil from flowing off, and not intended as packing; but being elastic, the lost motion can be taken out a great many times before it becomes necessary to remove any of the wicking, which consists of three layers, and allows a space of one fourth of an inch between the cap and the box proper. There are no cast-iron ribs in the boxes to cut grooves in the bearings as the babbitt wears away, as the babbitt is dove-tailed in the box (by a peculiar device of their own invention), and can be nearly worn to the casting before it becomes necessary to re-babbitt the boxes. It will be readily seen that by the use of this box the lost motion can be taken up on all the boxes in a very few minutes. The box is used on the matcher spindles and counter-shaft. It is so constructed on the matcher spindles as to act as an anvil for the blow of the matcher cutters, and the lost motion can be taken up without getting under the machine. The box can be removed by taking out one cap screw. Another improvement on this machine is the chip breaker on the matcher heads. This consists of a circular piece of cast iron (shown in cut), with a slot bored in one end of it. In this slot is inserted a piece of hardened tool steel, semi-circular

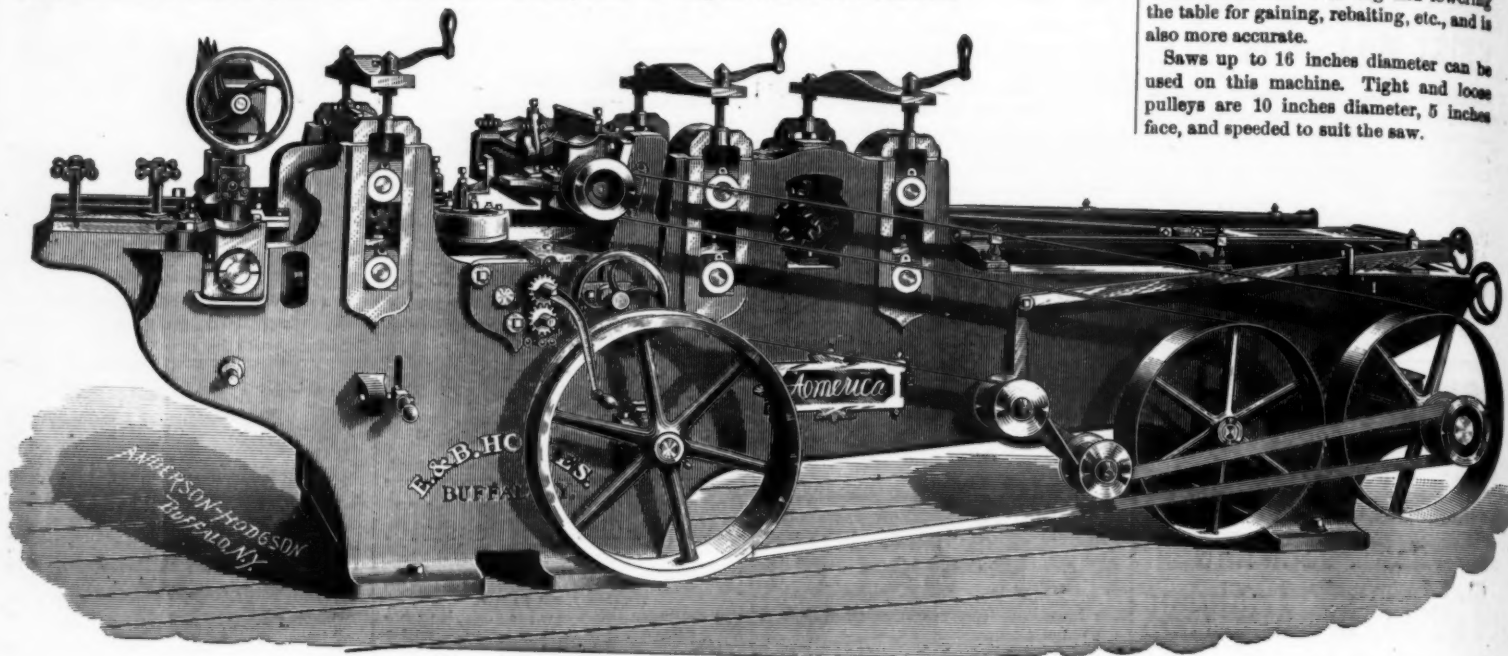
in form and six inches in length. This is held in place by two set screws. It can be moved out, and be made to run just as close to the matcher cutters as the nature of the work will permit. If it should wear out of shape (which is hardly probable, owing to its hardness), it can be taken out and ground and replaced in a few minutes. It is held in position by a weight, and has an adjustment of one and a half inches.

Another new feature is the manner in which the delivering rolls are weighted to be moved across the machine with one crank. The bed can be worn equally across its whole surface. The chip breakers and pressure bars for top and bottom cylinder have an adjustment to and from the knives. These adjustments permit the use of rebating, moulding, or other bits that project beyond the ordinary knives. The cylinder heads are solid steel forgings from the celebrated Frankford Steel Works, of Philadelphia, Pa. The small pinions are of steel. The roll shafts, counter shafts, cross bars, screws and studs are all steel.

It also has an attachment to set the gauge for either tight or slack sawing—a feature that operators will appreciate when they have to change from fine cabinet work to green, wet or icy lumber.

The frame is long and carries the counter shaft, which is furnished with the machine; the table is bolted fast to the frame, and the saw travels up and down by means of a hand wheel at the hand of the operator, and needs no fastening to keep it in place. This feature is preferable to the old fashioned method of raising and lowering the table for gaining, rebalting, etc., and is also more accurate.

Saws up to 16 inches diameter can be used on this machine. Tight and loose pulleys are 10 inches diameter, 5 inches face, and speeded to suit the saw.



THE "AMERICA" FLOORING MACHINE.

facturers that the caps of boxes, instead of being made as light as possible, should have all the weight put in them possible without destroying symmetry of construction. In their journal box the cap is very heavy; the pocket to hold the grease extends the whole length of the journal. It is very deep, and has a partition in the center of it. This divides it into two large chambers, one of them being used for suet or tallow, the other for waste and oil. Either chamber will hold about a pound of suet or tallow. The box is held in place by heavy cap screws and steel dogs, provided with set screws and jam nuts, the broad bearing surfaces being accurately planed together, as shown in cut. There is no wood or other hard substance between the boxes, candle-wicking being substituted to prevent the oil from flowing off, and not intended as packing; but being elastic, the lost motion can be taken out a great many times before it becomes necessary to remove any of the wicking, which consists of three layers, and allows a space of one fourth of an inch between the cap and the box proper. There are no cast-iron ribs in the boxes to cut grooves in the bearings as the babbitt wears away, as the babbitt is dove-tailed in the box (by a peculiar device of their own invention), and can be nearly worn to the casting before it becomes necessary to re-babbitt the boxes. It will be readily seen that by the use of this box the lost motion can be taken up on all the boxes in a very few minutes. The box is used on the matcher spindles and counter-shaft. It is so constructed on the matcher spindles as to act as an anvil for the blow of the matcher cutters, and the lost motion can be taken up without getting under the machine. The box can be removed by taking out one cap screw. Another improvement on this machine is the chip breaker on the matcher heads. This consists of a circular piece of cast iron (shown in cut), with a slot bored in one end of it. In this slot is inserted a piece of hardened tool steel, semi-circular

(shown in cut). If the pressure bar on the upper cylinder is kept in proper place, the delivering rolls on all machines, as heretofore constructed, are not strong enough to carry the board out. The result is that the man feeding the machine had to jump on the weight lever, and add his weight to it, in order to get the board through. The weights are thrown across the machine (as shown in cut) and connect the levers, procuring a uniformity of leverage, and a pressure powerful enough to

No. 2 Saw Table.

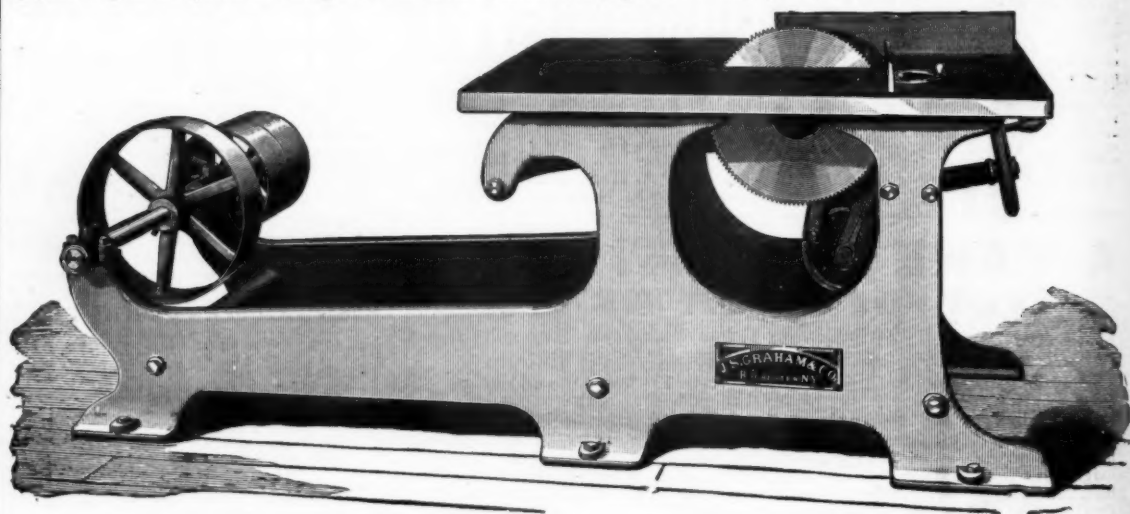
The accompanying cut represents a new No. 2 saw table, which is made by J. S. Graham & Co., Rochester, N. Y., will recommend itself to the trade for its elegance of design, as well as its fine construction and general adaptability to all kinds of sawing in general or special work.

It is intended for use in planing mills, sash, door and blind, box, picture frame and cabinet factories, car, agricultural im-

plement and pattern shops, etc., and is a complete machine for general use in ripping either straight or beveling, cross-cutting, or mitering, or any work that can be done with a dado head. The cross-cut gauge can be used on either side of the saw and can be set for any desired angle. Their improved slitting gauge is used on this machine. It is adjusted to width and locked in place instantly, and provided with means to set for any bevel and secured in place by their new device.

and their desire not to lay off their men are given as the reasons for taking the contract. A number of other large manufacturers are figuring on the introduction of oil instead of coal for steam purposes. The Union Steel Co. has already partially effected the substitution, both in their battery of boilers and in the soup-pots or furnaces for heating steel ingots.

If you wish to keep posted on the progress of the South, read the MANUFACTURERS' RECORD. Price \$4.00 a year.



NO. 2 SAW TABLE.

carry the board out without the assistance of any additional weight.

The pressure plate used over the under cylinder is provided with diagonal ribs instead of having them straight. Placed in this position, the ribs will sweep everything off the lumber and prevent indentations. The hood is so arranged that the operator need not remove it to get at the knives.

The bottom end of the matcher spindles runs on hardened copper, in cups of oil. Both matcher spindles and the guide can

plement and pattern shops, etc., and is a complete machine for general use in ripping either straight or beveling, cross-cutting, or mitering, or any work that can be done with a dado head.

The cross-cut gauge can be used on either side of the saw and can be set for any desired angle.

Their improved slitting gauge is used on this machine. It is adjusted to width and locked in place instantly, and provided with means to set for any bevel and secured in place by their new device.

Clipper Planer, Matcher and Moulder.

The engraving on this page represents a new Clipper planer, matcher and moulder, made by the Indiana Machine Works, Fort Wayne, Ind., designed and perfected with a special view to meet the demands for a medium and combined machine that could be offered at a small cost, and embrace the valuable features of the more expensive tools, together with easy ad-

and from the head, so that a moulding cutter projecting $\frac{1}{2}$ inch beyond the lip of head may be used without removing these parts.

The matcher spindles are of the best cast steel, running in self-oiling boxes and fitted with our improved step, which is easy of adjustment and self-oiling. The matcher heads are cast of the best gun metal and fitted with our improved chip breaker, which prevents splitting out in cross-grained and knotty lumber. By a

the cylinder may, by means of adjusting screws, be set to rest solidly on the lumber while the machine is in motion.

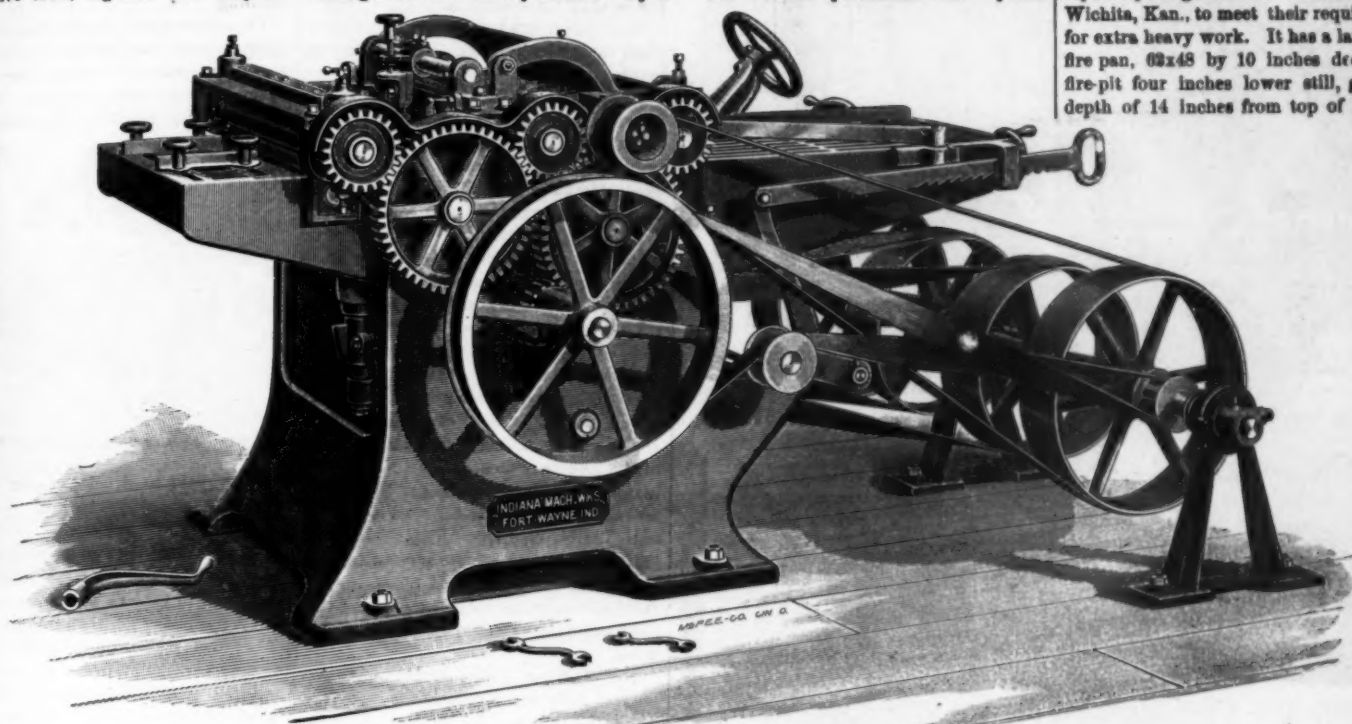
The machine will surface up to 25 inches wide and 6 inches thick; will match up to 124 inches wide and 2 inches thick. It has two feeds: 50 and 70 inch feet per minute. Tight and loose pulleys on countershaft are 10x6, and should make 900 revolutions per minute. Weight of machine about 3,000 pounds.

For further particulars and special

ners. Their goods can be found in all leading hardware and sporting-goods houses. Descriptive circulars will be furnished on application to Ideal Manufacturing Co., P. O. Box 1,064, New Haven, Conn.

Buffalo Stationary Blast Forge.

The accompanying cut illustrates a new stationary blast smith's forge which was especially designed for the Burton Car Co., Wichita, Kan., to meet their requirements for extra heavy work. It has a large deep fire pan, 62x48 by 10 inches deep, with fire-pit four inches lower still, giving a depth of 14 inches from top of bowl to



CLIPPER PLANER, MATCHER AND MOULDER.

justment, simplicity, and some new departures that will be appreciated by all practical wood-workers. For convenience of adjustment, strong and fast feeding, smooth planing and excellent workmanship, it is claimed to be unequalled by any machine of its class on the market.

The frame is heavy, wide at the base, and cast in one piece, thereby securing strength, rigidity and stiffness not possible to be attained when the frame is bolted together. The bed is very long, is also cast in one piece, and is fitted into the frame between long, heavy guides, which are provided with gibs and adjusting screws on front end of frame, so that any wear may be easily taken up and a perfect

very ingenious device, the operator may, with the aid of a small hand-wheel on the front end of bed, move both matcher heads and the guide across the bed simultaneously and without affecting the space between the heads. By this means the heads may be shifted to any part of or across the bed very quickly and without any trouble, and thus wear the platen and knives more evenly; one head may be as quickly adjusted independent of the other. The matcher heads may be entirely removed for wide surfacing by loosening one set screw. The spring that holds the lumber to the guide is also adjustable to and from the guide by means of a small hand-wheel at the front end of the bed, and may be

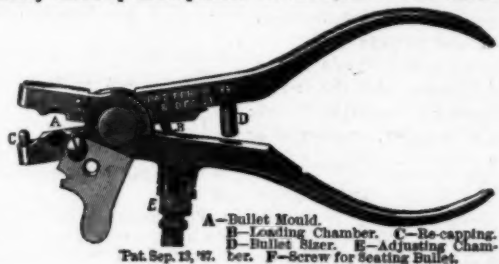
prices, address the manufacturers, Indiana Machine Works, Fort Wayne, Ind.

Cartridge Reloading Tools.

The Ideal Manufacturing Co., of New Haven, Conn., manufacturers of cartridge reloading tools, have just put on the market an implement that will be appreciated by all users of the rifle or pistol, as it will enable the sportsman to prepare his own

bottom of fire-pit, thus making it especially adaptable to handling large and heavy work. For light work the gates on side can be opened and fire lowered four inches.

The tuyere iron is extra heavy, with 34 inch blast gate fitted with an improved auto-clinker triangular ball for regulating the blast, and is designed especially to withstand heavy service without burning out. The water and coal boxes are cast in one piece with the fire-pan, with a sloping



CARTRIDGE RELOADING TOOL.

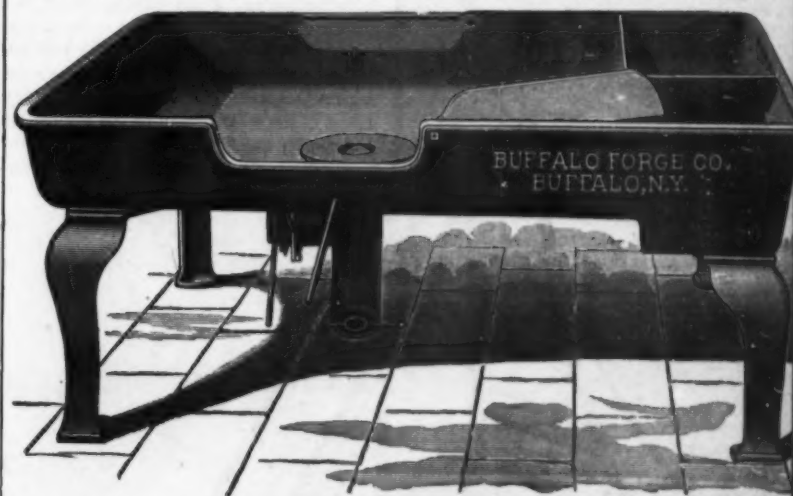
filing bed retained at all times. The entire bed, with matcher heads, is raised and lowered by large hand-wheel shown in cut, the indicator, in very convenient position, showing the exact thickness the machine is set to plane.

The head is forged from a high grade of crucible steel, is double belted, and runs in long bearings lined with genuine Babbitt, and provided with our improved self-oiling device, which is a positive guarantee against burning out of boxes. The head is four-sided, slotted on two sides, thus admitting the use of heading, patent siding and moulding cutters at any point desired to suit the nature of the work; no extra attachment required. The chip breaker and pressure bar are adjustable to

moved to the side and out of the way when using the full width of the machine for surfacing only. No wrenches required.

The machine has six large feed rolls (two feeding out rolls), with steel spindles running the full length. The feed is very powerful, and is instantly stopped or started with a perfectly balanced tightener. The rolls are provided with covers, and these in turn with scrapers and oil holders, thus preventing the accumulation of pitch or tar upon the rolls. The gearing is cut from solid iron, thereby avoiding the noise and back lash incident to the cast gears.

The chip breaker in front of the cylinder is very heavy, rests solidly on the lumber, and is self-adjusting to the different thicknesses of cut. The pressure bar behind



BUFFALO STATIONARY BLAST FORGE.

ammunition as he desires, as will be seen by the accompanying cut. It will permit the user to load shells with any charge of powder he may desire, seating a round or conical bullet on the same for either long or short range. This tool is for loading the following cartridges: 32-44 Smith & Wesson; 44 Smith & Wesson Russian Model; 38 and 44 calibre Winchester, and 44 and 45 Colt's revolver. The various implements manufactured by this company show that they are up to the times, and are alive to the requirements of gun-

petition dividing the two for easy removal of coal.

Although the patterns for these forges have recently been completed and they have never been advertised, the manufacturers, the Buffalo Forge Co., of Buffalo, N. Y., state that they have already supplied them to the American Brake Co., St. Louis, Mo.; Binghamton Wagon Co., Binghamton, N. Y.; Mexican National Railroad Co. and others, thus indicating its superior advantages for wide range from light to heavy work.

For prices or any other information desired please address the manufacturers as above.

Sullivan Diamond Core Drills.

During the past few years the increased introduction of diamond drills, cutting out a solid core, has been one of the features of mining operations. These drills, boring to any depth and taking out a solid section of all the rock strata passed

types of the Sullivan diamond drill, a brief description of which may be of interest. Fig. 1 is a cut of one of the larger machines, the "N," which will drill a hole $2\frac{1}{2}$ inches in diameter, at any angle, to a depth of 2,000 feet, taking out a core $1\frac{1}{2}$ inches in diameter. It consists of three parts on a cast iron base, engines, hoisting

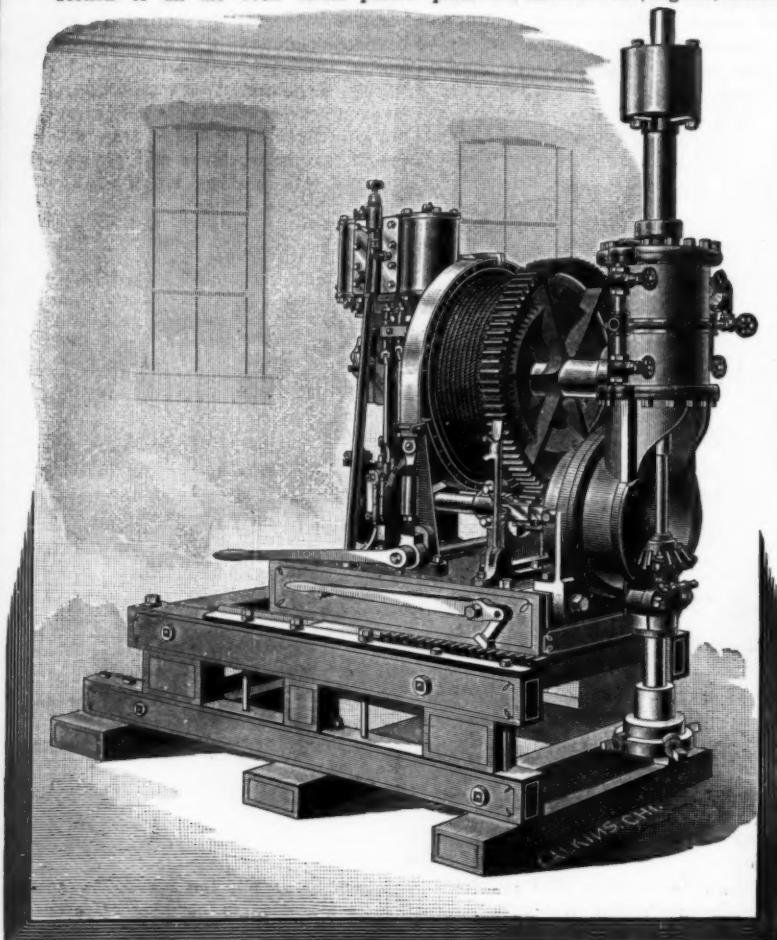


FIG. 1.

through, have proved themselves the only reliable machines for prospecting, where a knowledge of the exact location and thickness of mineral beds is required. So neces-

and feed apparatus, which, although parts of one machine, are yet distinct, so that each may be operated independently of the others.

There are two vertical engines set quartering. Their special feature is in the proportioning of the valves, which ride upon each other between the cylinders interact on each other in admitting and cutting off the steam, and are by this arrangement balanced. This allows great compactness in the arrangement of the engines, an unusually quick opening and closing of the cylinder ports, and produces a correct dis-



FIG. 2.

sary are these machines now considered in the development of mining lands, that many of the larger coal, iron and other mineral mining companies own diamond drills, which they keep constantly employed in prospecting from the surface, or in boring holes in advance of tunnels underground.

The accompanying cuts show several

tribution of the steam for economy and smooth running

Between the engines and the feed cylinder is the hoisting drum, for handling the drill rods; it is direct and back geared for different speeds, wound with wire rope, and controlled by a powerful wood-lined brake.

For feeding the single cylinder hydraulic

piston feed is used. This feed is capable of an unlimited range of adjustment, and can be instantly changed while the drill is running. This is a very important consideration, as the runner, noticing at once the indications given by the machine in passing into rock of a different degree of hardness, can immediately change the feed to exactly suit the layer just entered, and thus exercise skill and judgment to secure the most rapid progress consistent with economy in the wear of the diamonds.

Machines of this type are built in several sizes, of capacities from 300 to 4,000 feet depth.

In Fig. 2 is shown a Sullivan hand diamond drill, which was designed for use in places where a steam-power drill might prove too heavy for transportation, or too expensive for a limited amount of work. This machine will bore a $1\frac{1}{2}$ -inch hole to a depth of 300 feet, or by attaching horse or other power, considerably deeper. It is strong, and the arrangement of hollow standards and braces makes it rigid to resist the thrust of the rods in drilling. This drill is provided with an improved friction feed, which can be adjusted to any degree of nicety, by compressing a spring which determines the amount of friction, and hence the rate of feed. The pressure of the friction washers allows a little slip, in case the bit becomes wedged too tightly into the rock, and thus the feed is reduced until the bit cuts free. This lessens the liability to wear and breakage of the diamonds, while at the same time allowing fast feed where the rock permits, and that close regulation necessary to economical work.

The Sullivan diamond drills as now built embody many improvements, the result of many years' use of these machines. Some of these improved features make them especially adapted to work in the Southern coal and iron formations, where several have recently been sent and put into successful operation.

These drills are kept in stock by the Diamond Prospecting Co., 74 and 76 W. Lake street, Chicago, Ill., who are also contractors for their use in prospecting mineral lands.

Special Machinery.

We illustrate in this connection two special lines of machinery manufactured by Geo. McLaughlin & Co., 137 Oliver street, Boston.

We first describe the engines, which are built in two styles, one with a side crank and the other with center crank, by which they are adapted to meet certain conditions in location and purpose.

These engines are very simple in construction, and dispense with the complicated mechanisms for operating valves; also, all work of a showy, ornamental or useless nature.

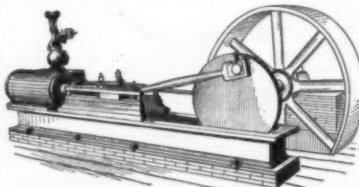


FIG. 1—SIDE CRANK ENGINE.

The bed is cast in one piece; the cylinder and steam-chest cast separate, one head cast on cylinder, thereby dispensing with two joints. The valve is of the automatic pattern, and nicely balanced. The exhaust is from lower side or bottom of steam chest, which insures perfect and instant drainage.

Pistons are fitted with steam packing, steel piston rods, steel and polished connecting and valve rods, polished cylinder head, double-disk polished crank, instead of ordinary bell crank, which not only

contributes largely to enhance the appearance, but also insures a more smooth and steady motion. They are designed not only for strength and durability, but for speed and economy, being fitted with automatic cut off, arranged so as to use a lesser or greater quantity of steam, as occasion or load on engine may require.

The side crank engines are built right and left to take up little room and enable them to be placed near the wall or side of building.

The center crank engine has just been improved and simplified, and in its excellent proportions conveys the idea of beauty, strength and durability. They are built in sizes from 8 to 125 horse-power,

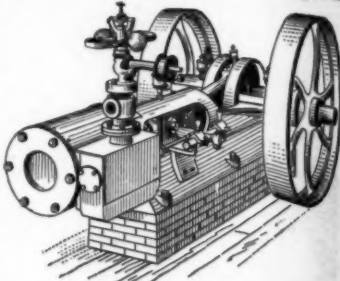


FIG. 2.—CENTER CRANK ENGINE.

and are said to develop under ordinary circumstances very close to the original estimate.

The elevator, as shown in the accompanying cut, is extremely compact, but embraces all modern improvements. It is self-contained, and thus always in line. The gear is of hard brass, and cut in position by a spiral mill, and is thus perfectly true. Worm is cut from a solid forged block, and runs in oil. Pulleys are self-oiling, and have inserted brass lining, easily replaced if worn.

The machine has the automatic limitation stop, an admirable invention for stop-

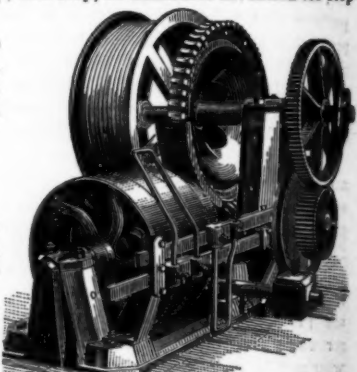


FIG. 3.—ELEVATOR.

ring at the end of its course.

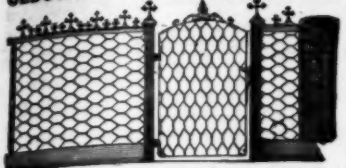
The drum is scored for rope, preventing chafing and overrunning.

The carriage has special self-acting safety lock, believed to be the best device in use to prevent accidents from breakage of ropes.

They are made in three sizes, and heavier if required. There are already 5,000 in use, which in itself is sufficient evidence of their utility.

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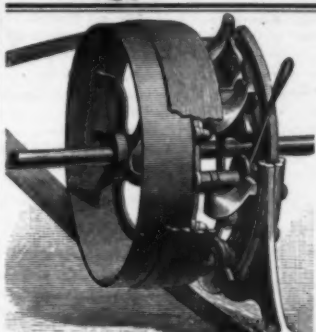
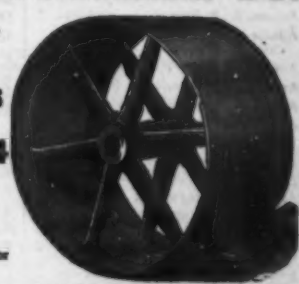
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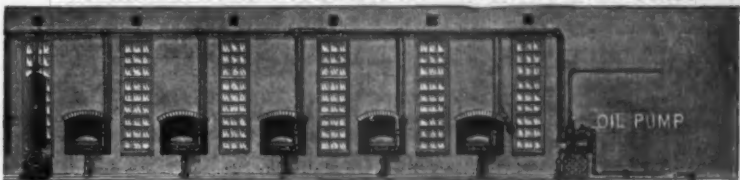
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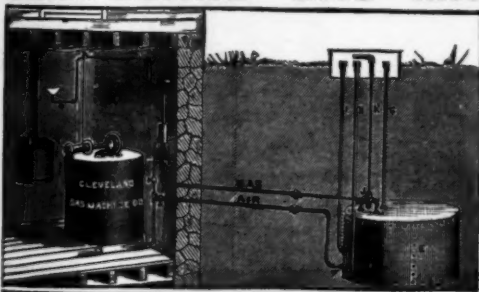
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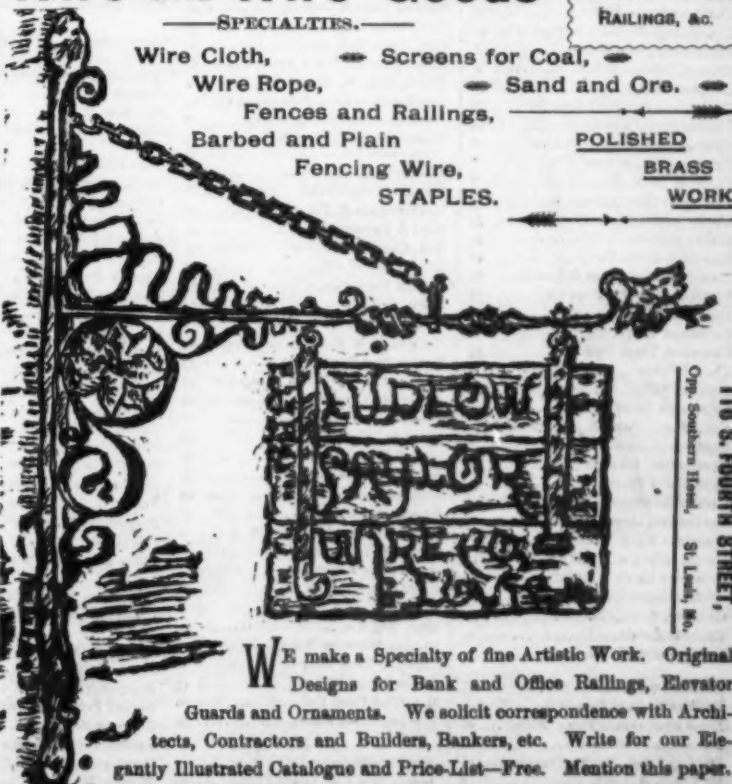
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Good Steam Heating
SAVES YOUR HEALTH.

Simplest in construction. Largest Steaming Capacity. Greatest Economy in Fuel. No Engineer or Skilled Labor is required. Manufactured under Fiske's Patent. Agents wanted everywhere. Send for new illustrated catalogue and reference.

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QUEEN LUBRICANT—Wanted a good house in every city and town to handle our Lubricant. Our goods have been well introduced.

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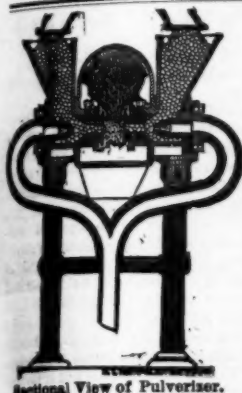
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CONTRACTORS FOR LIGHTING THE STREETS AND TOWNS. MANUFACTURERS OF VAPOR LIGHTS, STOVES, TINNERS, SOLDERING, RINGS OF STEEL, CARBON LAMP CORRESPONDENCE. Query & Write. 112 111 CANTON.

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John Wilkes, Manager.

CHARLOTTE, N. C.

MINING MACHINERY, GOLD MILLS.



Sectional View of Pulverizer.

PNEUMATIC PULVERIZER.

The principle of pulverization consists in the employment of

TWO POWERFUL OPPOSING CURRENTS

of dry super-heated steam, so arranged that they continuously charge themselves with crushed or granulated material, and by the great force and velocity of the steam currents the minerals are dashed against each other with such power of concussion as to cause the hardest ores to be pulverized to any degree of fineness desired. The high temperature of the super-heated steam currents employed, through which every minute particle of ore must pass, causes them to become very hot and dry, which produces a beneficial effect upon sulphuric and ores containing rusty gold. The light weight and simplicity of construction of the Pulverizer, the extremely small and inexpensive wearing parts are the WONDER and SURPRISE of all who witness its operation. The Company are prepared to furnish complete plants for pulverizing

10 to 200 Tons Per Day,

including a Sectional Steam Boiler supplying all the power required.

PNEUMATIC PULVERIZER COMPANY,

L. F. HOLMAN, Pres.

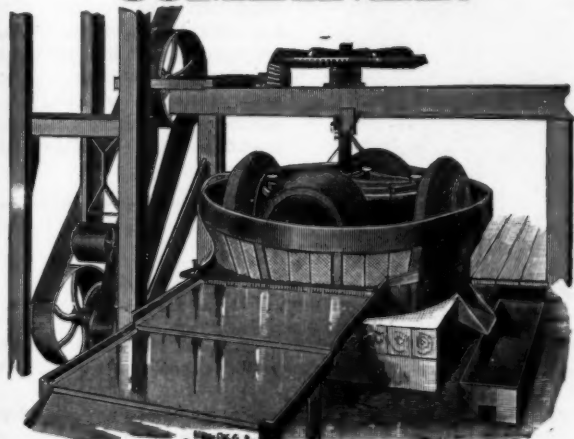
F. A. LUCKENBACH, Supt.

2 and 4 Stone Street, New York.

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WISWELL Ore Pulverizer AND Amalgamator COMBINED.



The following testimonial from Mr. Marsden, of the firm of Farrel & Marsden, manufacturers of Stone Breakers and Ore Crushers, Ansonia, Conn., speaks volumes for the Wiswell Mill:

Wiswell Electric Mining Machinery Co.

GENTLEMEN—After carefully inspecting your mill and seeing it in operation, I do not hesitate to say that it is one of the best, if not the best pulverizer and most complete gold saving machine I have ever seen. Please accept congratulations for your success.

S. L. MARSDEN.

WE FURNISH A COMPLETE MILL FOR \$2,500, DELIVERED ON BOARD CARS.

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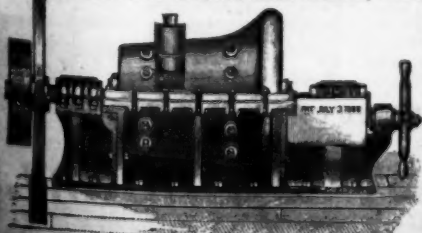
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The Greatest Pulverizer on Earth.

Pulverizes from 10 to 160 mesh fineness, and has a capacity of 1 to 3 tons per hour.



Better than buhr mills for pulverizing Phosphates, Plumbago, Cement, Foundry Facings, Iron for Paints, Gold and Silver Ores, Flint Rock for Glass, Coke for Carbon Paints, Asphalt Materials. Correspondence solicited. Send for samples of different products.

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Manufacturers' Agent.

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Lane's Band Friction Single and Double Cylinder

PORTABLE HOISTS

STANDARD DRUMS,

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ORE BUCKETS, SKIPS,

CAGES AND SHEAVES,

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For Surface or Underground Prospecting. No Restrictions as to Use.

THE ONLY RELIABLE DIAMOND DRILL MADE.

Improved Corliss Engine, Slide Valve and Straight Line Engines,

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The Most Reliable and Satisfactory
made for Prospecting from the
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RAPID! ACCURATE! ECONOMICAL!

M Hand Drill—Capacity 2,000 feet.

SPECIALLY ADAPTED TO SOUTHERN COAL AND IRON FORMATIONS.

Hand or Power Drills,

Capacities 300 to 4,000 feet. All sizes in stock.

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Hoisting and Hauling Engines,
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Pumps, Boilers.

Underground Haulage by Wire Rope a specialty.
Estimates furnished on complete plans. Contractors for
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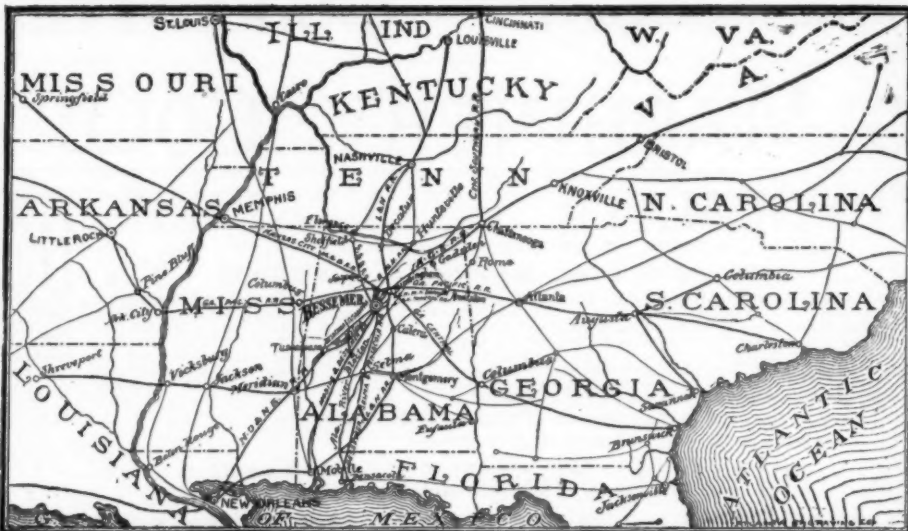
MEY & PATTERSON, Pittsburg, Pa. COAL & COKE, WASHING & CRUSHING PLANTS.

BESSEMER, ALA.

WHERE IS BESSEMER?

Located according to its latitude and longitude, Bessemer is in 33 deg. 20' North latitude and 87 deg. West longitude from Greenwich. Its position in the State of Alabama is just above its center and about midway between its eastern and western boundaries. Its position in the Southern States is a noticeably central one. It is midway between Montgomery and Decatur, between Meridian and Chattanooga, Mobile and Nashville, Savannah and Memphis, New Orleans and Louisville, all of which will readily appear from the map published herewith. So far as its geographical location is concerned it could not well be more central, more on the lines of communication and transportation between the leading and principal commercial and manufacturing centers in the South. It has lines of railway leading direct to Texas, via Vicksburg and Shreveport and via New Orleans; to Gulf ports, directly to New Orleans, to Mobile and to Pensacola; to all of the Atlantic ports and to the North, Northwest and West. No city of its age was ever so favored with so admirable, comprehensive and extensive a system of railway transportation.

On the 12th of April, 1887, the first lot was sold in Bessemer; on the 15th of the following September the place was incorporated as a city, having then a population of 1,500 people. At this time, 1st September, 1888, it has a population of 3,500. It has over 400 different structures, some of them business blocks that would highly credit a city of a hundred thousand population. Over two million dollars so far have been invested in improvements. It has completed the largest rolling mill plant in the South, and two of the largest



THE RAILWAYS OF BESSEMER.

In an area of four blocks, nine lines of railways center:

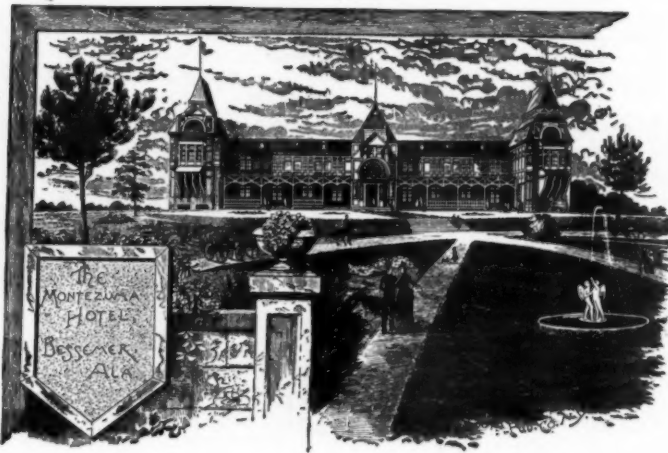
- The Alabama Great Southern R. R.
- The Louisville & Nashville Min'l. Linn.
- The Bessemer & Huntsville R. R.
- The Georgia Pacific R. R.
- The Kansas City, Memphis & Bessemer R. R.
- The Bessemer & Tuscaloosa R. R.
- The Bessemer Dummy Line (standard gauge).

All of these lines are running to Bessemer. The Bessemer & Huntsville is completed as far as Village Springs, forty miles on the way up Murphree's Valley, with its ultimate terminal point at Huntsville. It is being rapidly extended.

The Bessemer & Tuscaloosa is completed to Woodstock, a distance of thirty miles, lacking only eighteen miles of reaching Tuscaloosa. At Woodstock this line connects with the Bloccan Coal Mines Railway.

The lines of the Bessemer, Selma & Pensacola R. R. and Mobile & Bessemer R. R., now under contract and in process of construction, both center in this area.

The Sheffield & Bessemer R. R. is projected to Bessemer. It is now built as far as Jasper, forty miles northwest of Bessemer.



MONTEZUMA HOTEL, 194x150, OPENED NOV. 1, 1887.

iron furnaces, extensive foundry and machine shops and planing mills. Five more iron furnaces are under contract, three of them with foundations already being laid. An enormous furnace factory, machine shops and boiler works are being located, and will construct the five furnaces mentioned. An enormous fire brick, tile and terra cotta plant is being established; has already commenced the manufacture of fire brick and will regularly employ 200 hands.

WHY DOES BESSEMER GROW SO RAPIDLY?

Because it presents opportunities for the investment of capital, the establishment of manufactories and industrial institutions and for labor, common and skilled, that are unusual and unrivalled. In Bessemer, pig iron is being made cheaper than at any other point in the United States. The iron ore, the coking coal and the limestone are almost within a stone's throw of the city. The site of Bessemer is superb, unusually attractive, unimpeachably healthy, with thorough drainage and first class water

works. It is already a leading manufacturing point, and is destined to become one of the principal manufacturing centers in the South. Schools and Churches are already established.

The illustrations are of two structures already completed, one costing \$125,000 the other \$40,000. There are a large number of similar structures in Bessemer already completed.



CHARLESTON BLOCK, 300 FEET FRONTAGE, 2D. AVE., BET. 18TH AND 19TH STREETS.

ANY INFORMATION CONCERNING BESSEMER WILL BE PROMPTLY FURNISHED BY THE

Bessemer Land & Improvement Company.

WM. BERNEY, President. H. M. McNUTT, Secretary.

SHEFFIELD, ALA.

The Iron Manufacturing Center of the South.

AT THE HEAD OF NAVIGATION, ON THE TENNESSEE RIVER, SHEFFIELD is the *natural outlet* for the mineral and manufacturing products of Alabama and neighboring States seeking a water route to points on the Ohio and Mississippi rivers, and to the Gulf of Mexico, as well as the best *distributing point* over Alabama, Eastern Mississippi and East Tennessee, South Carolina, Georgia and Florida for Northern and Western produce, groceries, provisions, machinery, &c. Three Railroads already completed and in operation, and several others assured. *Principal shops of Memphis & Charleston Railroad*, in which cars and locomotives are to be built, are under contract to be erected here. These will employ between *four hundred and five hundred mechanics*, and consequently, with their families, will make an increase in population of at least two thousand people. Shops of three other railroads are contracted to be located here, some of them being now under construction.

FIVE COMPLETED BLAST FURNACES

Have a capacity of 700 tons pig iron per day. Experts do not hesitate to say that *iron can be manufactured more cheaply* at Sheffield than at Birmingham, and its *river transportation facilities* will enable Sheffield iron to reach the principal markets at a saving of from

\$2.00 TO \$2.50 PER TON.

The quality of the iron produced is pronounced by consumers to be the best from any furnace in the South. Stove Works, capacity fifty stoves per day, now in operation. A first-class daily newspaper is regularly issued. Furniture Factory, Bottling Works, Bakery, Dummy Street Railroad, a 90-inch Morse Cotton Compress, Electric Lights, Agricultural Implement Works, 3 Steam Brick Works, 2 Hand Brick Works, 2 Steam Wood-Working Establishments, Water Works, 2 Banks, a Savings Bank, and Steam Job Printing Office already in successful operation, 15-ton Ice Machine just completed and a five-story Hotel, with all modern appliances, now being erected. The Cleveland Hotel, Park House and numerous boarding houses furnish accommodations to travelers; Paint Works nearing completion. Other manufacturing establishments under consideration, among them a large Cotton Mill soon to be commenced.

Good Water. Free Public Schools and Churches. Drainage Excellent.

HEALTH AND CLIMATE UNSURPASSED.

Splendid Opening for Men of Push and Energy. No Better Point for Profitable Investment. No "OLD FOGY" Element Here.

SITES FOR MANUFACTURING ENTERPRISES,

And for Free Public Schools and Churches

Donated by Sheffield Land, Iron & Coal Company.

Population January 1st, 1887, 700; August 21st, 1887, by actual count, 2,588. Increase of population, 800 per cent. in eight months, and only limited by accommodations. Present estimate (August, 1888) fully 3,500.

Three years ago the site of Sheffield was cultivated as corn and cotton plantations, and was without a railroad. Numerous two and three-story brick business houses, and one and two-story dwellings have been, and are being erected. The class of buildings will compare favorably with those in cities of 20,000 inhabitants.

LIMESTONE of excellent quality for *fluxing iron* in unlimited quantities at the furnaces' sites. First-class building stone and brick clay abundant. Rich and extensive deposits of *brown hematite iron ore* within twenty miles, along the lines of two Sheffield railroads, which, by actual results in the furnaces, yield above 50 per cent. metal. Iron of high grade is being made with a pound of coke to a pound of metal—a result never before accomplished with Southern ores and coke. The Sheffield & Birmingham Railroad runs through the heart of the *Warrior Coal Fields*, which abound in first-class *coking, steam, gas and grate coal*. Timber is abundant and cheap.

The *Memphis & Charleston Railroad*, *Sheffield & Birmingham Railroad* and *Nashville, Florence and Sheffield* branch of the *Louisville & Nashville Railroad* are now in operation into Sheffield. Surveys of three other railroads have been recently completed to Sheffield, which will soon be the *best combined river and railroad transportation center* in the South.

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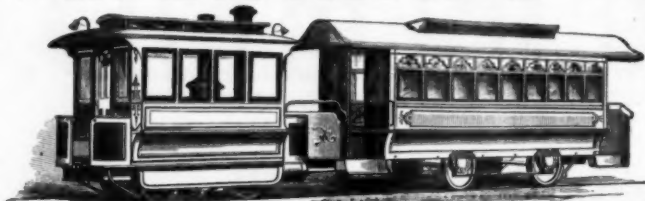
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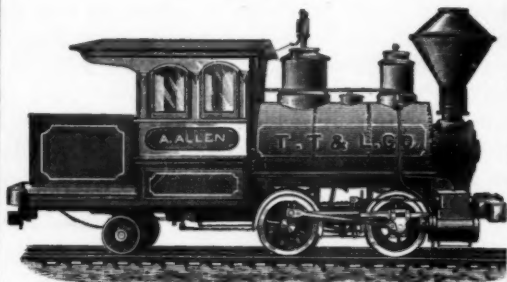
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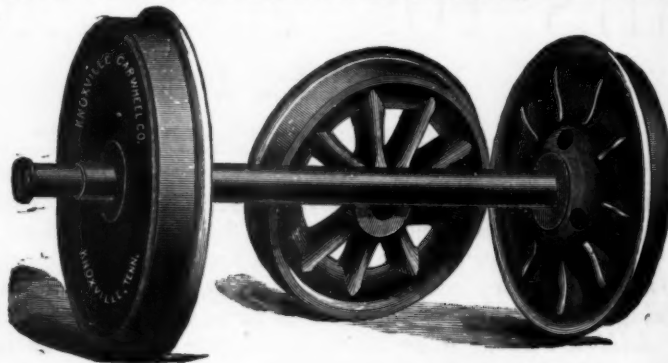
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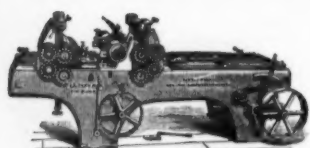
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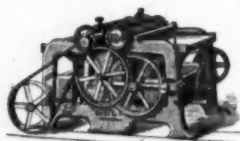
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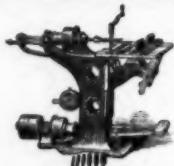
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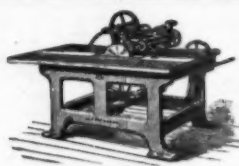
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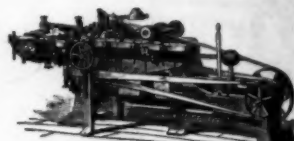
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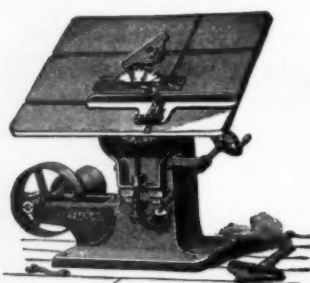
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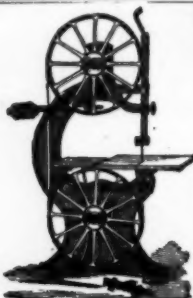


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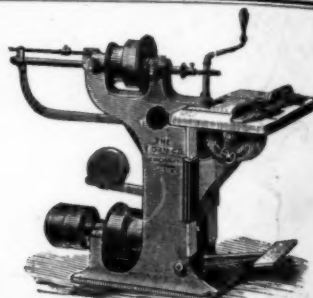
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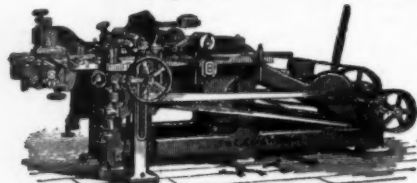
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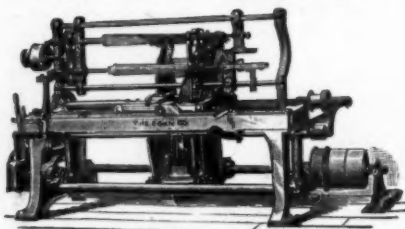
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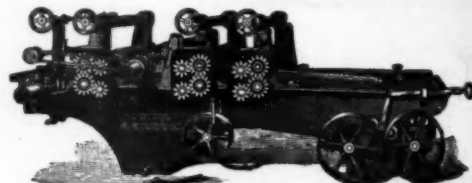
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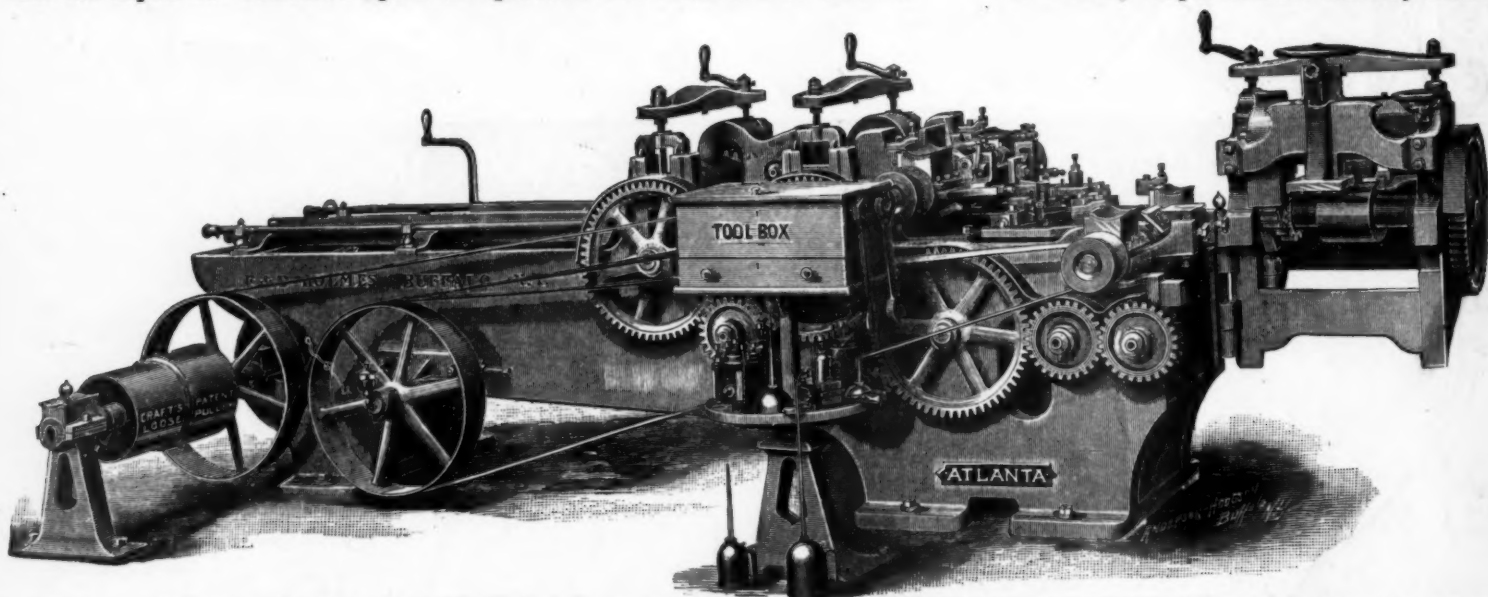
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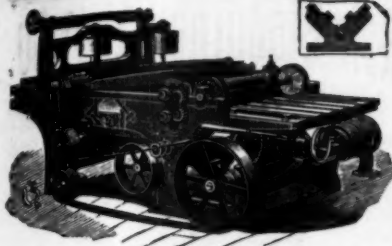
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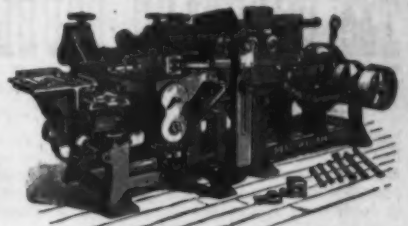
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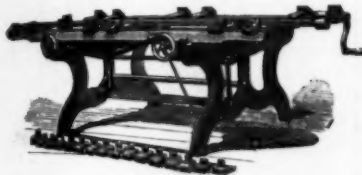
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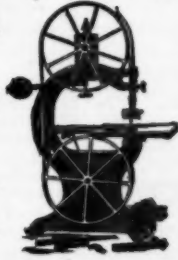
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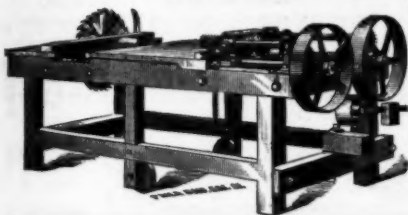
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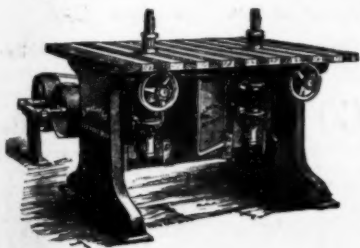
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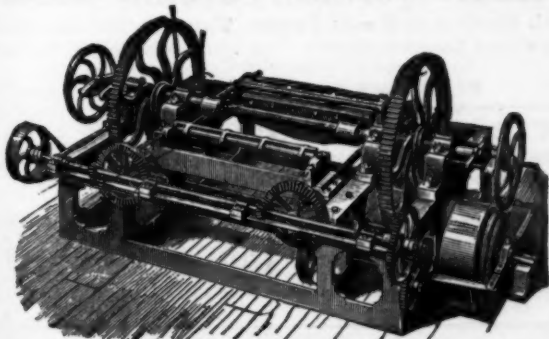
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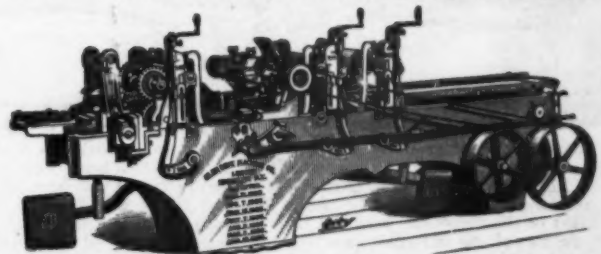
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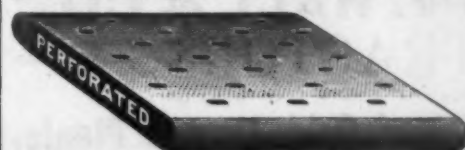
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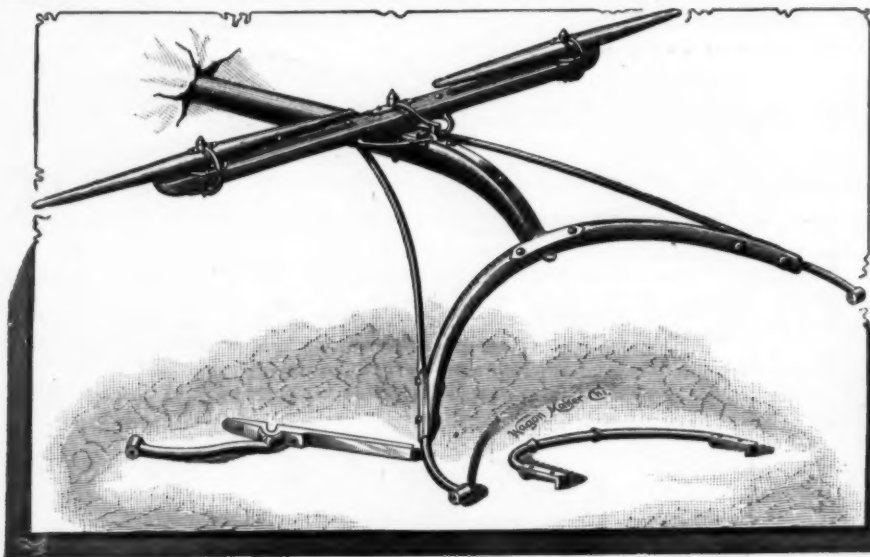
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unhook, the regulator controls action of doubletree, thereby preventing neck yoke from leaving the pole. For single carriages, wagons or sleighs it holds the singletree firmly in position, preventing it from rolling or rocking, the same as in double carriages; the strain being taken off the bolt, dispensing with the use of stay straps. In the event of a trace unhooking the horse is prevented leaving the thills. For two-horse wagons extra heavy irons are made, with heavy clevis combined, and so constructed that by drawing the hammer the doubletree can easily be removed. The doubletrees are provided with clevis ready for use with chain, after removal. For Mowers and Reapers—it prevents the horses from being pulled back on cutting bars, and is of great assistance in turning corners by removing strain from end of pole, thus preventing it from breaking. It possesses great advantages over ordinary fastenings in point of strength, utility, safety and cheapness. We are also manufacturing **CARRIAGE POLES AND THILLS**, combining our Complete Regulator Attachments. The irons can easily be applied to old as well as new work, either by farmer or mechanic. We feel confident all will agree with us that the Regulator is worth all its costs for either of the following reasons: 1st. It holds doubletree and singletree firmly in position—no rolling or rocking. 2d. By its use stay straps and chains are rendered unnecessary. 3d. It prevents accident by reason of stay strap breaking. 4th. It prevents accident in event of bolts breaking. 5th. It imparts elegance to appearance of carriages. 6th. The general utility of Regulator.

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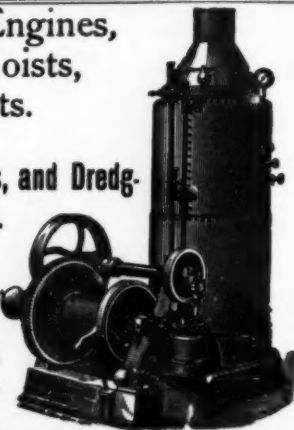
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Crown Point Iron Co., Crown Point, N. Y.
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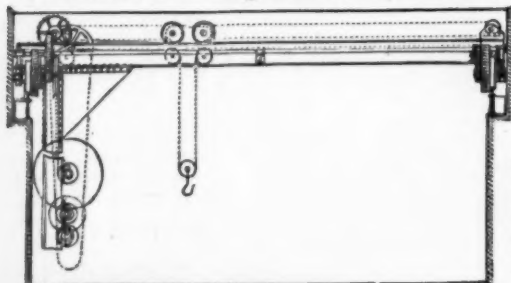
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TRADE NOTES.

The Egan Co., of Cincinnati, have originated a new flooring machine that is said to have a remarkable capacity for high-class, rapid work. To make perfect work at a high rate of speed requires perfect working machines, and to make it day in and day out without breaking down or stalling in any way is something beyond ordinary machines. The Egan Co. claim that their machine, however, will do this.

In the new catalogue lately issued by the S. A. Woods Machine Co., of Boston, may be noted descriptions of several improvements in their wood-working machinery. One of the most important improvements is applied to their planing and matching machines. It consists of a patent geared adjustable gauge, bearing against the shoulder instead of the tongue, as is usual, keeping the face edges straight, parallel and true, and leaving the scant width and imperfection when they occur to show only on the tongue. There are other practical applications of this gauge by which two pieces of flooring are worked at the same time, or one piece divided and all the edges worked simultaneously. The writer recently had an opportunity of looking through the extensive works of this company and observing something of their system and methods. He was impressed with the thought that their way of dividing and classifying their work and their methods of testing it apart and together must tend to bring out all possible imperfections and defects and result in continued improvement.

It is announced by the Link Belt Machinery Co. and Messrs. Burr & Dodge that the business heretofore conducted by the Eastern branch of the former house in New York, and by the latter in Philadelphia, has been transferred to the Link Belt Engineering Co., the transfer taking effect January 1, 1889. The extensive works of the new company and its main office are located at Newtown, Philadelphia, on the Philadelphia & Reading Railroad. The New York house, 49 Dry street, will be continued under efficient management, and the Western connection will, as heretofore, be the Link Belt Machinery Co., of Chicago and Minneapolis. This consolidation has in view largely increased facilities for supplying link belting and link belt machinery in the Eastern, Middle and South Atlantic States, and the application of the best available engineering skill to the problems arising in their use. The Link Belt Engineering Co., by the establishment of their works at a central point in the East, have prepared to meet promptly the demands of their steadily increasing trade for link belt power transmitting machinery and appliances for the handling of materials in bulk or package.

The M. C. Bullock Manufacturing Co., Chicago, manufacturers of Corliss engines, band friction hoisting machinery, diamond pointed rock drills and general mining machinery, write us as below. Their review makes a splendid showing, and proves that 1888 was with them "a year well spent":

"We have had a busy year, working over time on several occasions for months at a time, and then have had to refuse orders

because we could not fill them in the 'time specified.' We have increased our facilities by adding lathes, planers, cranes, &c. We have also added a large Putnam Machine Co.'s slotter, fitted with their patent relief motion to prevent dragging the edge of tool over the work on the upward stroke. It is a splendid tool. We have completed and put on the market a full line of (Lane's patent) band friction portable hoisting machines, covering a range of drums from two feet to six feet in diameter, and a full line of standard (Lane) drums from three to eight feet in diameter. We have also built a number of large first motion and geared hoists for coal, iron and copper mines. We have perfected and put on the market our improved Corliss engine, which is meeting with great success. Among our present orders is one for the city of Chicago, and a 32x60-inch for the Pullman Palace Car Co. We have also brought out our new hand-power diamond drill, the 'Bravo,' intended to be used in prospecting in the mountains or other places inaccessible to steam or power drills. It is so light and portable that it can be packed and carried on men's backs to points where even a pack mule cannot go. We have also added a light and portable power prospecting core drill, the 'Crescent,' a machine thoroughly well built, but lighter and cheaper than any machine of same power that has ever been offered in the market. We have also perfected and brought out our medium weight diamond prospecting core drill, the 'Dauntless,' which has fairly jumped into public favor, having already made some of the most successful borings ever made by a diamond drill. We have also designed, built and shipped one of our 'Giant' diamond drills, with a complete outfit to bore holes to a depth of 3,000 feet, taking out a core the entire depth, to the British Government of Australia. This is to be the most complete and powerful drill ever built in this country or Europe, and competent mining engineers pronounce it the most perfect piece of mechanism ever built for deep hole prospecting. The fact that this is the fifteenth Bullock drill bought and operated by the Victorian Government speaks volumes for the excellence of our machines both in design and workmanship. We take pleasure in crediting the MANUFACTURERS' RECORD with many of the inquiries, which we can trace directly to our advertisement in your valuable paper."

Literary Notes.

"FIVE LITTLE PEPPERS AND HOW THEY GREW." By Margaret Sidney. This is one of the most delightful stories written for the children for a long time. Its author is Margaret Sidney, well known as a skillful and much loved writer of stories for little people. In the "Five Little Peppers" she has almost excelled herself, for the book cannot be too highly praised. Its descriptions of home life are especially good, and so natural do they seem that with the Little Peppers we deplore the shadows and enjoy the stray gleams of sunshine which alternately visit "The Little Brown House." It teaches particularly well the fact that wealth is not essential to happiness. Its moral tone is elevated and healthful, and its bright and sunny pictures, so full of life and yet never overdrawn, cannot fail to make an impression for good upon all who are so fortunate as to read it.

THE Popular Science Monthly for January contains "The Guiding-Needle On an Iron Ship," by Lieutenant-Commander T. A. Lyons, U. S. A.; "House Drainage From Various Points of View," by John S. Billings, M. D., U. S. A.; "Town-Life as a Cause of Degeneracy," by G. B. Barron, M. D.; "Sea-Lions and Fur-Seals," by W. H. Larabee; "Genius and Talent," by Grant Allen; "Inventive Geometry," by Edward R. Shaw; "Science and its Accusers," by W. D. Le Sueur; "The Suanetians and Their Home," by Douglas W. Freshfield; "The History of a Doctrine," by Prof. S. P. Langley; "Gauss and the Electric Telegraph," "The Sacrifice of Education—A Protest," "Sketch of Moses Ashley Curtis," with portrait, &c., &c.

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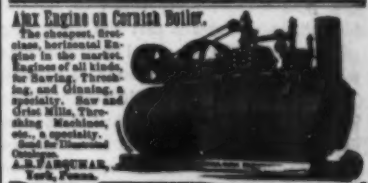
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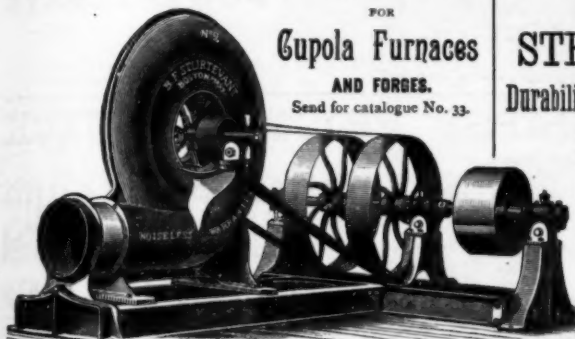
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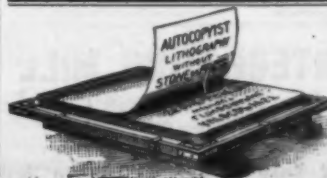
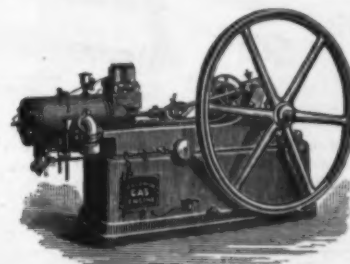
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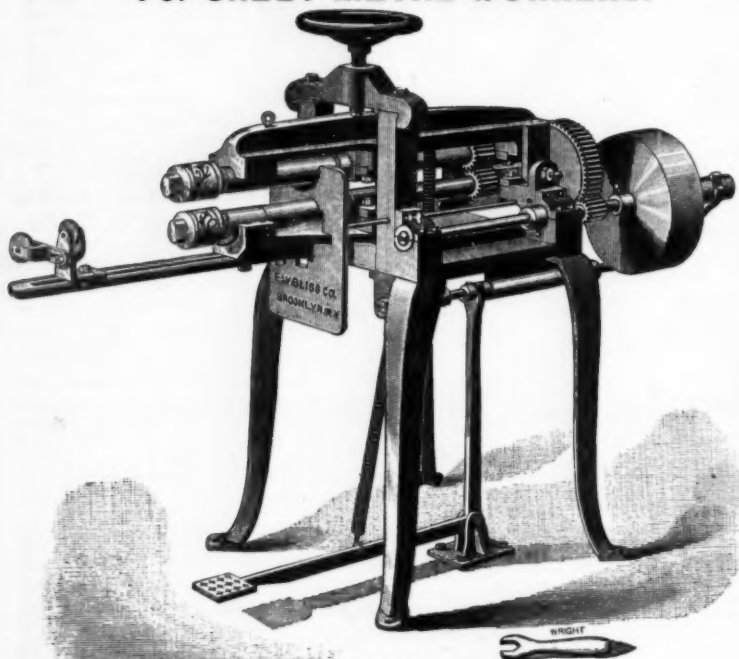
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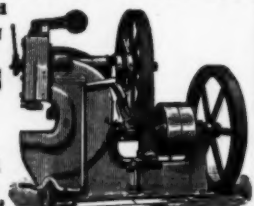
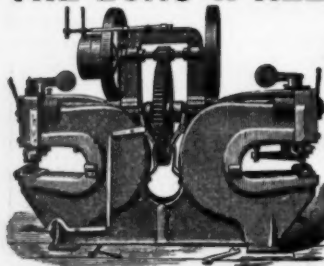
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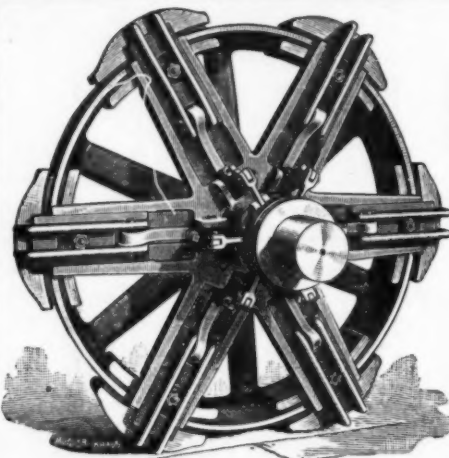
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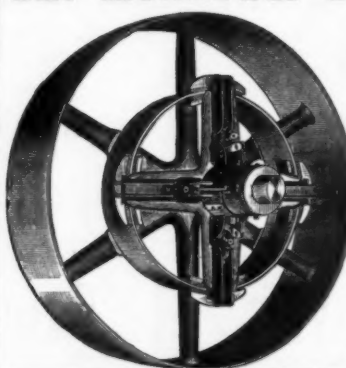
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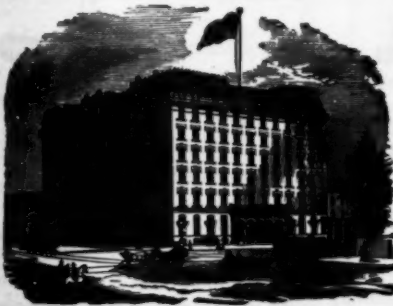
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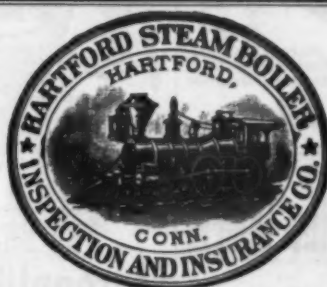
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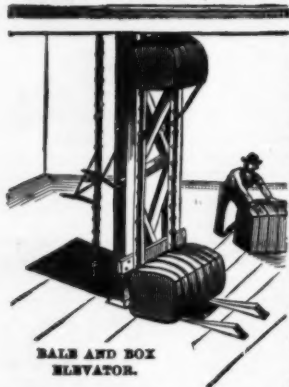


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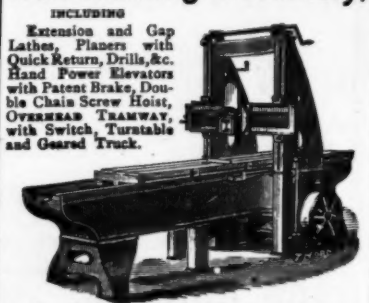
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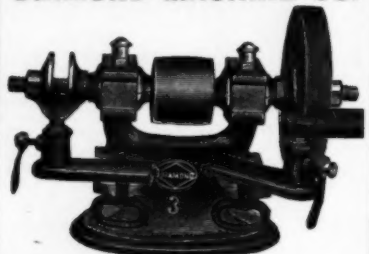
All goods manufactured by us are guaranteed to
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Grinding & Polishing Machinery

In all sizes and every description. For every pur-
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Yet offered for the money.
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These Hack Saws will cut Iron and Steel be-
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Iron working mechanics everywhere must and
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Patent Nickel-plated Steel frame, and one dozen
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of \$1.50. Hardware dealers will furnish them at
the same price. All saws marked with a star,
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STEEL CASTINGS

From 1-4 to 15,000 lbs. Weight.

True to pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger and more durable than iron forgings in any position or for any service whatever. 40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for circulars and prices to

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The remarkable and only process of combining GUTTA PERCHA and other valuable materials with Linseed Oil without the use of injurious solvents is controlled and worked by this company. We manufacture by this process a preparation which has

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**Business
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1889.

Will be Double the
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It will contain new large scale maps occupying two pages only (no cut up maps) of all the important States. The entire arrangement will be new, embodying the most improved methods of reference and indexing, clearly showing the location, population, and commercial advantages of over 200,000 towns in the United States, Canada and Mexico.

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Long Distance Incandescent Electric Lighting.
CHEAPEST TO CONSTRUCT AND MAINTAIN.
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The DYNAMO of this Company is AUTOMATIC in its regulation, and will maintain a UNIFORM LIGHT with ALL or ANY PORTION of the lights in Circuit. Our LAMP will not BLACKEN and will MAINTAIN its CANDLE POWER during its Guaranteed life.

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TRADE NOTES.

THE Goulds Manufacturing Co., of Seneca Falls, N. Y., report business good, and an active and growing demand for their pumps from all parts of the U. S., with largely increased Southern trade.

ROBINSON & ORR, Pittsburgh, Pa., dealers in rails, scrap pig iron and iron ore, have issued a beautiful calendar designed by leading Boston engravers. It combines the artistic with plain clear figures so attractively printed that, while it is an ornament to an office, it is also a very valuable calendar.

THE Caldwell sash balance is becoming a great favorite in the market. Carpenters and builders highly endorse it in the highest terms, and the hardware trade finds an increased demand for the Caldwell balance, and also the lock. Prices for 1889 can now be had by the trade by addressing W. H. Caldwell, Rochester, N. Y.

THE Egan Manufacturing Co., of Cincinnati, Ohio, have lately brought out a spoke lathe, which they claim to be much superior to anything in that line heretofore made. They say that it will turn out one-third more spokes in a day than any other lathe in use, with less labor, being as nearly automatic as it is possible for a machine to be. The demand for it is already very large.

THE old reliable concern of Rumsey & Co., manufacturers of every variety of well and cistern pumps, hydraulic rams, fire pumps, etc., at Seneca Falls, N. Y., are preparing to do an immense business for the coming year. They desire to place their illustrated catalogue and price-list for 1889 in every hardware dealer's hands, and will forward a copy upon application. Send in your name and address now.

THE foot-power machinery manufactured by the Seneca Falls Manufacturing Co., of Seneca Falls, N. Y., is just what cabinet makers and carpenters and builders need whose business is not large enough to warrant having steam power. They make quite a variety of lathes, scroll saws, sewing machines and other apparatus, which are sold at decidedly low prices. A catalogue and price-list should be in the hands of every carpenter, wheelwright or cabinet maker. The address of this concern is No. 642 Water street, Seneca Falls, N. Y.

THE Cleveland Gas Machine Co., of Cleveland, Ohio, whose advertisement appears in this issue, desire correspondence with canning factories who want the latest and most perfect heating apparatus. They also make gas machines for country and suburban residences, factories and mills, for illuminating, that are said to surpass the old methods for safety and economy. Their present address is 48 and 50 Long street, Cleveland, O., but the growing demand for their machines and apparatus will necessitate their moving soon into larger quarters in East Cleveland.

THE now famous Acme automatic engine, which users claim "must possess brains," is gradually extending its field of usefulness. It is said to be the most economical motive power, considering first cost, that is known, costing even less to run and keep in repair than a wind mill. The Acme engine can now be run with natural gas for fuel instead of coal oil, and a recent testimonial from Buffalo parties places the cost of this fuel at 7 cts. per day for 7 horse-power engine. The Acme engine is used in small shops, saw mills, for threshing and grinding grain, to propel steam yachts and for a hundred different purposes, and is manufactured by the Rochester Machine Tool Co., of Rochester, N. Y. Send for descriptive circular.

THE enterprising manufacturers of hardware and woodenware specialties, F. F. Adams Company, of Erie, Pa., will begin the new year with a largely increased line of specialties for the hardware and woodenware trades. They desire agents in every city and town in the country to carry and handle their full and salable line of specialties. The F. F. Adams Co. aim to carry the best and most attractive line of specialties for country stores who handle hardware and woodenware. Their new illustrated catalogue is ready, and will be mailed to this trade with best discounts upon application.

THE system of the Hyatt Pure Water Co. seems to be making good progress. Their filters have been adopted and are in successful operation in some twenty-five large towns and cities. It is claimed for their city plants that they remove all suspended matter and a large percentage of impurities in solution. Paper mills in Holyoke and other cities producing the best white paper have found by experience that the Hyatt filters are a necessity. They are also largely used by sugar refining companies, brewing companies, hosiery companies, knitting mills, laundries, ice companies, hotels, &c.

It will pay you to write to WILLIAMS ENGINE CO., 447 North St., Baltimore, Md., for **AUTOMATIC ENGINES**, For any duty. Electric Light Engines a specialty. Quality high. Prices moderate. Address **WILLIAMS ENGINE CO.** 447 North Street, Baltimore, Md.

Steam Engines, Boilers, Steam Pumps, Eclipse Fan Blowers, Tire Benders, manufactured; all guaranteed. Also, the LANDIS PATENT STEAM RADIATOR supplied. Address **THE LANCASTER STEAM PUMP & MACHINE WORKS, Lancaster, Pa.**

Kroeschells & Bourgeois' PATENT FEED WATER HEATER. For Heating Water by EXHAUST STEAM. We guarantee to heat the feed water to within a degree or two of temperature of the exhaust steam. The great trouble with other heaters, caused by the early and frequent corroding of Flues is obviated in our Heater—the material of tubes being the BEST OF BRASS. No back pressure to engine. All sizes from 30 to 1,000 h. p., and larger. Saves boiler repairs. Saves fuel. Office and Works: 4 to 12 Michigan St., Chicago, Ill.

Ewer's Feed Heater and Purifier.

It will relieve the engine from all back pressure and heat the water to 212° Fahr. There is nothing to get out of order and it will last as long as the engine. The saving of fuel in putting feed water into a boiler at 212° Fahr. over the same water at 60° Fahr. is about 14 per cent. It is the cheapest Feed Water Heater in market for its capacity. It is more economical in its use of water than any other. It can be set up by anyone of ordinary intelligence.

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and give to the ENGINE and MACHINERY throughout the mill a more uniform speed with a **KELLAM DAMPER REGULATOR**. Over 10,000 in use. **CONTROL** the steam in your **HEATING** system with a **STANDARD REGULATING VALVE**. **EXTRACT** the OIL from the **EXHAUST** and prevent the boiler from priming and being pitted by the OIL with an **ELIMINATOR**. **PACK** your **ENGINE** and **PUMP** with **EUREKA PACKING**. Get circulars.

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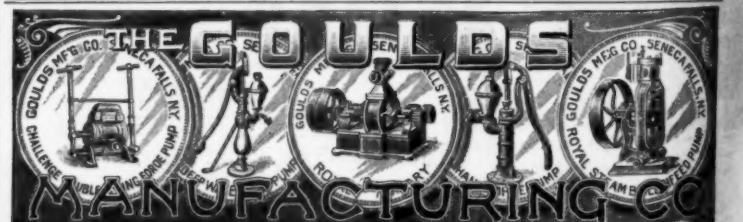
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Send us stamps for catalogue, stating exactly what class of machinery you require, and in what paper you saw the advertisement. **W. E. DREW, Agent,**

S. C. FORSAITH MACHINE CO. Machinists and General Machinery Dealers, **Manchester, N. H.**

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Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as shown in the Following Tests at Holyoke Testing Flume:

Size of Wheel.	Head in Ft.	Horse Power.	Per Ct. Useful Effect
15-inch.	18.00	30.17	.9980
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WITH PROPORTIONATELY HIGH EFFICIENCY AT PART-GATE.

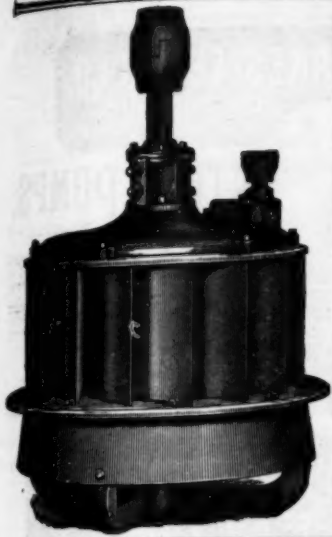
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THE VICTOR WHEEL IS PARTICULARLY ADAPTED TO SETTING ON

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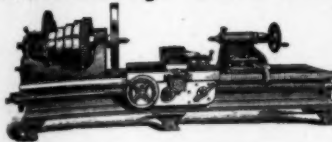
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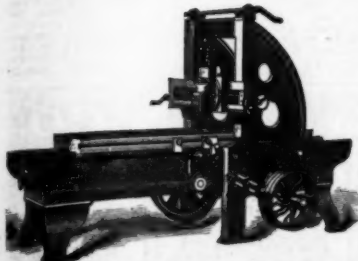
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Engine Lathes, Planers,
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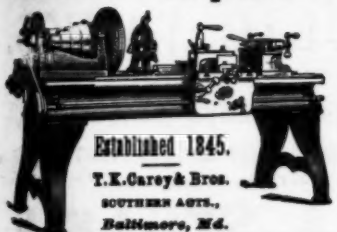
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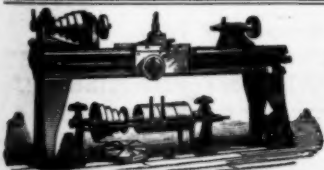
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**17, 24 & 27-INCH
Engine Lathes**

New Designs.

THE MULLER MACHINE TOOL CO.

8th and Evans Streets,

CINCINNATI, O.



Sebastian, May & Co.'s Improved Screw Cutting

FOOT AND LATHES POWER

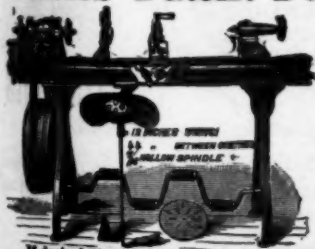
Drill Presses, Shapers, Band, Circular and Scroll
Saws, Machinists' Tools and Supplies. Lathes
on trial. Catalogue mailed on application.

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Barnes' Patent Foot Power Machinery.

Complete outfit for Actual Workshop Business. Lathes for Wood or
Metal. Circular Saws, Scroll Saws, Formers, Mortisers,
Turners, &c., &c.

Our Patent Velocipede Foot-Power is without question the best yet
applied to Lathes. Read a few expressions from those using them:
"I do not see how your lathes can be produced at so low cost." "The
velocipede foot-power is simply elegant." "Can turn a whole day,
and feel as little tired as though only walking around." "In regard to
the velocipede foot-power, I consider the lathe without an equal."
"I sat at the lathe for 11 hours, cutting off and threading 1½ steam
pipes. Those who say it declared it equal to 1½ hour job in machine
shop." "Using the velocipede foot-power, the operator can hold a steady
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equal to any cutting twice the money." "What astonishes me is, how
you can make machines to pay you for so small sum of money." "The
No. 6 Lathes is the most perfect tool I ever saw for the money." "I can
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other style of foot-power lathe." "There is a : : : : : strength, the
body is at rest, steady, the hands and attention free for the job."
"The velocipede.—It is the best foot-power of any for lathes."



If desired, these machines will be sold ON TRIAL. The purchaser can have ample time to test
them in his own shop and on the work he wishes them to do. Descriptive Catalogue and Price-List
Free. **W. V. & JOHN BARNES CO., No. 231 Baby St., Rockford, Ill.**
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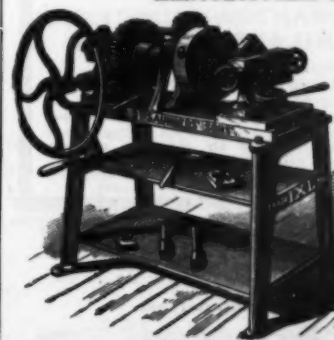
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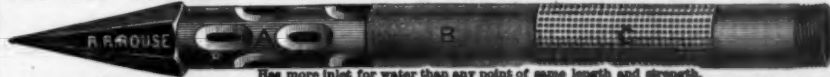
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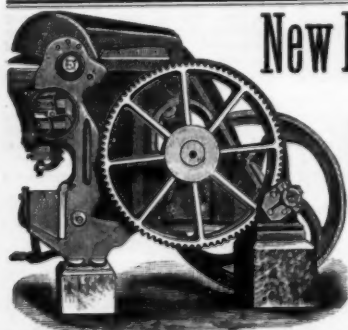
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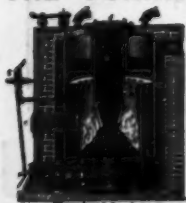
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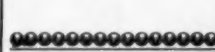
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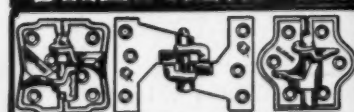
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